R842-05 ERIC REPORT RESUME

ED 010 238 3-01-67 24 (REV)
NONINTELLECTIVE FACTORS ASSOCIATED WITH SCHOLASTIC ACHIEVEMENT.
TERRELL, GLENN * WYER, ROBERT S., JR.
GFF21302 UNIVERSITY OF ILLINOIS AT CHICAGO CIRCLE
CRP-1139
BR-5-1008
- -66
EDRS PRICE MF-$0.45 HC-$11.68 292P.

*ABILITY IDENTIFICATION, APTITUDE, *COLLEGE STUDENTS, *PERFORMANCE FACTORS, *PARENT ATTITUDES, QUESTIONNAIRES, INTELLIGENCE LEVEL, UNDERACHIEVERS, STUDENT ATTITUDES, PERSONALITY, *ACADEMIC ACHIEVEMENT, CHICAGO, ILLINOIS

NONINTELLECTIVE FACTORS ASSOCIATED WITH ACADEMIC ACHIEVEMENT IN COLLEGE WERE INVESTIGATED IN THREE PHASES OF RESEARCH--(1) PERSONALITY AND MOTIVATIONAL CORRELATES OF ACADEMIC APTITUDE AND PERFORMANCE AMONG STUDENTS WHO HAD COMPLETED AT LEAST 1 YEAR OF COLLEGE WERE EXAMINED, (2) DATA WERE COLLECTED FROM FRESHMAN STUDENTS BEFORE THEY ENTERED COLLEGE, AND (3) QUESTIONNAIRES WERE ADMINISTERED TO STUDENTS TO DETERMINE THE PARTICULAR GOALS THEY BELIEVED WERE IMPORTANT TO THEM AND THE PERCEIVED RELEVANCE OF GOOD GRADES AND ACHIEVEMENT-RELATED ACTIVITY. VARIOUS CONCLUSIONS WERE PRESENTED ON THE RELEVANCE OF ACADEMIC ACHIEVEMENT TO GOAL ATTAINMENT. STUDENTS WHO BELIEVED THAT ACADEMIC ACHIEVEMENT WAS A NECESSARY CONDITION FOR ATTAINING THEIR GOAL PERFORMED BETTER THAN STUDENTS WHO BELIEVED THAT ACADEMIC ACHIEVEMENT WAS NOT SO ESSENTIAL. THE IMPORTANCE OF ATTENDING COLLEGE, ASSESSED INDEPENDENTLY OF THE REASON FOR ITS IMPORTANCE, WAS RELATED POSITIVELY TO PERFORMANCE AMONG BOTH MALES AND FEMALES. (TC)

ED010238

CRP-1139

NON-INTELLECTIVE FACTORS ASSOCIATED WITH SCHOLASTIC ACHIEVEMENT

* * *

Cooperative Research Project No. 5-1008

* * *

GLENN TERRELL and ROBERT S. WYER, JR.

University of Illinois, Chicago Circle

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated do not necessarily represent official Office of Education position or policy.

NON-INTELLECTIVE FACTORS ASSOCIATED WITH SCHOLASTIC ACHIEVEMENT

Cooperative Research Project No. 5-1008

Glenn Terrell and Robert S. Wyer, Jr.
University of Illinois, Chicago Circle

September 1961=June 1963
September 1965-June 1966

The research reported herein was supported by the Cooperative Research Program of the Office of Education, U.S. Department of Health, Education, and Welfare.

ACKNOWLEDGEMENTS

The authors are greatly indebted to Wayne Hershberger and Catherine Felknor, who assisted in the research performed during the first two phases of the study, and to Thomas Gronek and Patricia Creedon, who assisted with the research during the third stage. Appreciation is also expressed to Ann Doran, Barbara Davis, Vida Zeruolis and Rita Stalzer for their help in preparing the manuscript.

TABLE OF CONTENTS

I Introduction 1
  1. Statement of the Problem 1
  2. Objectives 1
  3. Related Research 3

II Phase I: Preliminary Investigation and Analyses 5
  1. Introduction 5
  2. Method 6
    A. Personality Characteristics 7
    B. Academic and Social Motivation and Expectancies 9
    C. General Values 9
  3. Results and Discussion 10
    A. Sex 10
    B. Aptitude 20
    C. Performance 22
  4. Supplementary Analysis -- Relationship of Aggression to Academic Effectiveness 26
    A. Results 28
    B. Discussion 28

III Phase II: Motivational and Background Correlates of Academic Effectiveness among College Freshmen 33
  1. Introduction 33
  2. Method 34
    A. Collection of Data 34
    B. Scoring Procedures 34
    C. Selection of Sample 35
  3. The Effects of Motivation and Social Role-Related Attitudes on Academic Effectiveness 36
    A. Desires and Expectancies Associated with Academic and Social Goal Attainment 40
      1) Sex 40
      2) Aptitude 50
      3) Performance 51
      4) Supplementary Analysis 1 53
      5) Supplementary Analysis 2 -- Satisfaction with Academic and Social Goal Attainment 54
    B. Students' Attitudes and Values Associated with Academic Success and Intellectual Activity 58
      1) Sex 58
      2) Aptitude 58
      3) Performance 58
    C. Parental Influences 62
      1) Sex 82
      2) Aptitude 86
      3) Performance 88

4. Effects of Stability on Effectiveness in Goal-Directed Activity 92
  A. Self-Acceptance 92
  B. Quality of Parent-Child Relations 94
  C. Between-Parent Differences in Evaluating their Child 96
  D. Parental Childrearing Attitudes and Practices 98
5. Miscellaneous Factors 110
  A. Sex 110
  B. Aptitude 110
  C. Performance 115
  D. Discussion 115

IV Phase IIIA: Clarification of Motivational and Attitudinal Effects upon Performance 117
1. Introduction 117
2. Selection of Subjects 117
3. Relevance of Academic Achievement-Related Behavior to Primary Goal Attainment 118
  A. Measurement of Dependent Variables 121
  B. Results 122
  C. Supplementary Analyses 124
  D. Discussion 127
4. General Values of Students and their Parents 132
  A. Description of Measures 133
  B. Students' Values 134
  C. Discussion 137
  D. Parents' Values 139
  E. Discussion 139
5. Further Investigation of the Effects of Alienation and Conflict 144
  A. Alienation from the Home Environment 144
  B. Difference in Values within the Home Environment 150
  C. Alienation from the College Environment 156
  D. General Conclusions and Evaluation 160
6. Self-Evaluations and Parental Evaluations 161
7. Parental Child-rearing Factors 164

V Phase IIIB: Behavioral Correlates of Academic Achievement 168
1. Conformity due to Informational and Normative Influence 168
  A. Method 170
  B. Manipulation of Incentive 171
  C. Assessment of Conformity 172
  D. Results 174
  E. Discussion 174
2. Preference for Individual vs. Group Goals in a Decision-Making Task 179
  A. Method 180
  B. Administrative Procedure 181
  C. Results 184
  D. Discussion 190

VI Summary and Conclusions 192
  1. Relevance of Academic Achievement to Goal Attainment 193
  2. Desire for Personal Achievement 194
  3. Social Motivation and Socially-Oriented Behavior 194
  4. Sex Differences and Effects of Social Role 195
  5. Personality Factors, Attitudes and Values 197
  6. Influences of the Home Environment 199
  7. Concluding Remarks 201

Bibliography 202

Appendix A - Modification of Liverant's Goal Preference Inventory 205

Appendix B - General Information Questionnaire -- Phase I 216

Appendix C - Subscales of the MHS Used in Study of Relationship Between Aggression and Academic Achievement 220

Appendix D - General Questionnaire Administered to Students -- Phase II 226

Appendix E - Test Anxiety Questionnaire and Questionnaire on Expected Grades in College 233

Appendix F - Adjective Check List for Determining Self Evaluations and Self Acceptance 236

Appendix G - Questionnaire Administered to Parents -- Phase II 239
  Part I General Questionnaire Items
  Part 2 Child Rearing Items
  Part 3 Evaluation of Child

Appendix H - Measure of Relevance of Academic Performance-Related Activity to Primary Goal Attainment -- Phase 3A 258

Appendix I - Questionnaires to Measure General Attitudes and Values of Students and Parents -- Phase 3A 263
  1) Student's questionnaire
  2) Parent's questionnaire

Appendix J - Questionnaires to Determine Evaluations Made of Students by Themselves and their Parents -- Phase 3A 275

Appendix K - Assessment of Parental Child-Rearing Attitudes -- Phase 3A 278

TABLES

1 16 PF Factors As a Function of Aptitude (Apt), Performance (Per) and Sex 11

2 Desires and Expectancies Associated with Academic and Social Goals as a Function of Aptitude (Apt), Performance (Per) and Sex 15

3 General Questionnaire Items as a Function of Aptitude (Apt), Performance (Per) and Sex 18

4 Mean Scores on Aggression Variables of Males anf Females 29

5 Mean Academic Effectiveness for Males at Two Levels of Acknowledgement of Acts of Aggression and Guilt Over Aggression 30

6 Mean Academic Effectiveness for Males at Two Levels of Feelings of Aggression and Guilt Over Aggression 30

7 Mean Academic Effectiveness for Females at Two Levels of Acknowledgement of Acts of Aggression and Guilt Over Aggression 31

8 Mean Academic Effectiveness for Females at Two Levels of Feelings of Aggression and Guilt Over Aggression 31

9 Criteria for Selecting Students at Each Combination of Aptitude (Apt) and Performance (Per) 37

10 Mean Aptitude (Apt), Performance (Per) and Difference Between Apt and Per (D) of Males and Females at Each Combination of Independent Variables 38

11 Number of Parents in the Sample who Returned Questionnaires at Each Combination of Aptitude (Apt), Performance (Per) and Sex 39

12 Desires to Seek and to Receive Academic Goals as a Function of Aptitude (Apt), Performance (Per) and Sex 41

13 Expectancy to Seek and to Receive Academic Goals as a Function of Aptitude (Apt), Performance (Per) and Sex 43

14 Desires to Seek and to Receive Social Goals as a Function of Aptitude (Apt), Performance (Per) and Sex 45

15 Expectancy to Seek and to Receive Social Goals as a Function of Aptitude (Apt), Performance (Per) and Sex 48

16 Mean Grade-Point Average as a Function of Desire to Seek Academic Recognition and Desire to Seek Social Recognition 55

17 Expectancies to be Satisfied with Receipt of Academic and Social Goals as a Function of Aptitude (Apt), Performance (Per) and Sex 57

18 Students' Attitudes Toward College and Intellectual Activity as a Function of Aptitude (Apt), Performance (Per) and Sex 59

19 Parents' Attitudes and Values Toward College and Education As a Function of Aptitude (Apt), Performance (Per) and Sex 63

20 Parental Expectancies and Attitudes Concerning Academic Performance as a Function of Aptitude (Apt), Performance (Per) and Sex 69

21 Parental Dominance in Decisionmaking as a Function of Aptitude (Apt), Performance (Per) and Sex 73

22 Establishment of Parents and Siblings as Models as a Function of Aptitude (Apt), Performance (Per) and Sex 75

23 Measures of Similarity to Parents as a Function of Aptitude (Apt), Performance (Per) and Sex 78

24 Quality of Relations with Parents as a Function of Aptitude (Apt), Performance (Per) and Sex 83

25 Intercorrelations of Parents Education Level and Attitudes Toward College 85

26 Self-Acceptance and Acceptance by Parents as a Function of Aptitude (Apt), Performance (Per) and Sex 93

27 Between-Parent Differences in Evaluating their Child as a Function of Aptitude (Apt), Performance (Per) and Sex 97

28 Between-Parent Differences in Evaluating their Child as a Function of Academic Variables and Sex -- Total Sample 99

29 Students' and Parents' Opinions Concerning Disciplinary Practices as a Function of Aptitude (Apt), Performance (Per) and Sex 102

30 Parental Child-Rearing (PARI) Factors as a Function of Aptitude (Apt), Performance (Per) and Sex 106

31 Miscellaneous Variables as a Function of Aptitude (Apt), Performance (Per) and Sex 111

32 Criteria for Selecting Subjects - Phase III A 119

33 Mean Aptitude (Apt), Performance (Per) and Difference Between Academic Variables (D) 120

34 Variables Pertaining to Most Important Goal and Second-Ranked Goal as a Function of Aptitude (Apt), Performance (Per) and Sex 123

35 Importance of Goals as a Function of Aptitude (Apt), Performance (Per) and Sex 125

36 Variables Pertaining to Particular Goals as a Function of Aptitude (Apt), Performance (Per) and Sex 128

37 Students Values as a Function of Aptitude (Apt), Performance (Per) and Sex 135

38 Mothers' Values as a Function of Aptitude (Apt), Performance (Per) and Sex 140

39 Fathers' Values as a Function of Aptitude (Apt), Performance (Per) and Sex 142

40 Absolute Discrepancy in Values Between Students and their Mothers as a Function of Aptitude (Apt), Performance (Per) and Sex 145

41 Absolute Discrepancy in Values Between Students and their Fathers as a Function of Aptitude (Apt), Performance (Per) and Sex 148

42 Absolute Discrepancy Between Values of Mothers and Values of Fathers as a Function of Aptitude (Apt), Performance (Per) and Sex 151

43 Numerical Discrepancy Between Mothers Values and Fathers Values as a Function of Aptitude (Apt), Performance (Per) and Sex 153

44 Absolute Discrepancy Between Values of Students and Mean Values of Same-Sex Students in the College Population 157

45 Self Evaluations, Parents' Evaluations and Between Parent Discrepancy in Evaluations as a Function of Apt, Per and Sex 162

46 Child Rearing Indexes as a Function of Apt, Per and Sex 165

47 Conformity under Achievement and Affiliation Incentive Conditions as a Function of Aptitude (Apt), Performance (Per) and Sex 175

48 Summary of Matrices Presented to Subjects and the Effect of Choices on Outcomes 182

49 Mean Number of Team-Oriented Choices as a Function of Aptitude (Apt), Performance (Per), Sex and Type of Matrix (Mat) 185

50 Analysis of Varaince Summaries for Data in Tables 2 and 4 186

51 Mean Number of Team Oriented Responses on (a) Matrices Low in D_{TI} and (b) Matrices High in D_{TI} as a Function of Apt, Per and Sex 187

52 Mean Correlation Between the Number of Team-Oriented Responses and D_{TI} as a Function of Apt, Per and Sex 189

CHAPTER I

INTRODUCTION

1. Statement of the Problem

The research reported here investigated some of the fundamental factors that contribute to differences between the level of academic performance attained by college students and their measured ability. At a time when special efforts are being made to encourage the intelligent student toward maximum utilization of his abilities, the failure for many bright students to perform at levels even approximating those they would be expected to attain poses an obvious and serious problem for educational institutions. It was in the hope of providing information that would allow the early identification of the potential underachiever and would suggest guidelines for early corrective action . that this research was initiated.

2. Objectives

The general objective of the study was to obtain information as to why some university students perform at a level discrepant from their measured ability.

It should be noted that the discrepancy between performance level and ability level is bidirectional; that is, several students typically perform at levels much higher than had been anticipated. Academic aptitude or ability, as it is measured by standardized college entrance examination scores, may not reflect intelligence as much as it indicates the degree to which the student has developed general intellectual skills relevant to college performance. To this extent, a student's academic aptitude test scores reflect the level of performance he would be expected to attain with an average amount of effort. Students whose performance level exceeds expectations, or overachievers, are those who are assumed to direct more effort toward academic goal attainment than is typical of college students, while students whose performance falls short of their measured ability, or underachievers, are assumed either to direct less than effort toward academic pursuits than is typical of college students, or are less efficient in their pursuit of academic goals. In identifying nonintellective correlates of academic performance, it is necessary to consider both underachievement and overachievement.

In this research, aptitude and performance were generally manipulated independently. This procedure allowed personality factors associated with aptitude independent of performance to be determined. While no specific hypotheses concerning these latter relationships were made, these data were expected to provide insight into the effect of general intellectual ability in channeling motivation and behavior.

Initial stages of the research were directed toward the interpretation of academic achievement within a framework similar in some respects to that proposed by Rotter (1955). That is, achievement was hypothesized to be a function of needs, goals and expectancies. (In this context, needs were considered to be internal states or conditions that require external objects for their gratification. Goals were conceived of as conditions or activities which a person recognizes as potentially pleasureful or satisfying. Expectancies were assumed to reflect the subjective probability that goals would be attained.)

Subsequent phases of the research continued to explore the implications of initial investigations. However, the scope of the study was expanded to consider family background factors expected to affect academic achievement, and to explore experimentally certain behavioral correlates of academic achievement suggested from the questionnaire-based research of earlier phases. Because of the scope of the research, it seems appropriate to forego a detailed discussion of its objectives and the rationale underlying them to sections of the report that deal specifically with the issues involved. However, the factors considered in successive steps of the investigation may be summarized.

Phase 1. An investigation was made of motivational and personality factors associated with academic achievement among second year college students. These factors included desires and expectancies associated with seeking and receiving academic and social goals, and personality characteristics expected to be related to behavior directed toward the pursuit of these goals. Particular attention was given to sex differences in motivation and to differences in the value of academic performance to vocational and social goal attainment among males and females.

Phase 2. 1. Instruments used in the first phase of the study were administered to entering freshmen to determine whether motivational characteristics acknowledged by students before they entered college would predict their subsequent academic achievement. In addition, an attempt was made to test hypotheses, suggested by results of Phase 1, concerning background factors associated with achievement. In this effort, information was obtained from both parents and students pertaining to the quality of parent-child relationships, to parental expectancies and attitudes concerning the child's academic performance, and attitudes toward the value of college.

2. It appeared necessary to consider not only motivational and attitudinal correlates of performance, but also to investigate factors that would affect the development of consistent behavioral tendencies conducive to goal-seeking effectiveness. Ambivalence concerning either the value of academic goals, or the type of behavior likely to result in goal attainment was expected to be detrimental to academic effectiveness. Furthermore, students who were unable to develop a consistent set of internal standards for self-evaluation were expected to be less effective in their pursuit of academic goals.

Phase 3. 1. A systematic attempt was made to delineate the effect upon academic performance of (a) the goals students believed to be important to them and (b) the perceived relevance of good grades and performance-related activity to the attainment of these goals. This investigation was expected to clarify certain of the issues raised by results of the first two phases of the research.

2. Certain ambiguities in the results of initial investigations were possibly attributable to inadequate delineation of motivational variables.

For example, a desire for academic achievement resulting from purely intellectual interests was not distinguished from a desire for good grades without intrinsic interest in the subject matter to which the grades pertain. A more refined instrument for assessing values in both academic and social areas was used to investigate this possibility. Hypotheses concerning the effects of alienation and conflict, based upon implications of results obtained during Phase 2, were also tested using measures taken from parents' and students' responses on this instrument.

3. To test certain implications of questionnaire-based research on motivational correlates of academic achievement, and to clarify certain issues raised by this research, behavioral correlates of academic performance and aptitude were investigated experimentally. Specifically, conformity under conditions in which personal achievement and social affiliation were differentially emphasized, and the tendency to make individualistic or group-oriented choices on decision-making tasks, were investigated systematically as a function of both aptitude and performance.

B. Related Research

Studies of particular relevance to the issues considered in the research reported here are cited in the context of the discussion of these issues as they occur. Certain general comments may be appropriate at this time.

Studies of non-intellective correlates of academic achievement have been numerous but frequently unsuccessful (Lavin, 1965). A fairly representative sample of this research has been compiled by Kornrich (1965). Some studies have explored the effect of family conditions and previous educational experiences. For example, Weitz & Wilkinson (1957) investigated the relationship between academic success and six conditions pertaining to family situation and type of secondary school attended. Although they included divorced parents and deceased parents among family conditions, their only statistically significant finding was that only children performed less well than did children with siblings. They discovered also that students who graduated from public secondary schools did better academically than military school graduates.

Other investigators have looked to personality characteristics as possibly significant variables in academic achievement. Although questionnaires, the MMPI, Rorschach, T.A.T. and other personality measuring instruments have been employed in these studies, by far the most popular instrument appears to be the Edwards Personal Preference Schedule. Typical of the studies using this last instrument is that of Gebhart and Hoyt (1958). In their investigation of personality need differences between underachievers and overachievers, these investigators discovered that overachievers scored significantly higher on the scales of Achievement, Order, Intraception, and Consistency, while underachievers scored significantly higher on scales of Nurturance, Affiliation and Change. On the basis of their study, the authors hypothesized two patterns of underachievement: (a) that associated with a need for variety (Change) wherein academic studies may seem boring, and (b) that associated with social motives (Affiliation, Nurturance) wherein friendship may be placed above scholarship.

Studies such as those of Burgess (1956), involving projective techniques, have, in the main, also yielded few significant findings.

Still other investigators have sought to discover if early training and experiences might differ among achievers and underachievers. The research of Winterbottom (1953), for example, suggests that differences in achievement motivation of the college student are due in part ot the degree to which parents accelerated independence training during early childhood. Baldwin, Kalhorn, and Breese (1945) suggested that the strength of the need to achieve is positively related to the degree of severity of early childhood socialization training.

By and large, the studies conducted in the area of underachievement have been attempts to discover if underachievers can be differentiated from normal- and overachievers by means of certain established instruments or on the basis of specific non-intellective characteristics. The instruments and the characteristics have been selected on the basis of intuition, hunch, conscience or an implicit theory, and little effort has been made to interpret the results within a theoretical framework. A noticeable exception, is the study by Worell (1959) in which the level of aspiration method associated with Levin's field theory is utilized and the results interpreted in terms of the reality-irreality dimension of that theory. McClelland's book, The Achievement Motive (1953), should, perhaps, be mentioned as an important work which includes theory about achievement. However, this book is primarily concerned with theory and methods of measuring motives rather than with the underachiever.

The lack of a theoretical basis for most of the studies of underachievement has seriously limited their contribution to an understanding or explanation of the underachiever. These studies have, however, provided hints as to possible fruitful areas of investigation.

Chapter II

Phase I PRELIMINARY INVESTIGATION AND ANALYSES

1. Introduction

The objective of this phase of the study was to delineate selected personality and motivational factors related to academic performance and aptitude among students who had attended college for at least one year. Primary consideration was given to the type of goals available to students in college, the importance attached to these goals, and the relevance of good grades to their attainment.

American colleges and universities provide the means for students to attain two general types of goals. Intellectual and academic goals are provided by the educational structure of the institution and may be attained through satisfaction of specific academic requirements and participation in campus cultural and intellectual events. Social goals are provided by extracurricular activities and social interaction, peripheral to the formal educational system. These goals are attainable through interpersonal relations and recognition from peer group members. Students may attend college to attain primarily academic goals, to attain primarily social goals, or to attain both simultaneously.

It is reasonable to expect that high academic performance is a function of the desire to expend effort toward attaining good grades, and of the degree to which behavior patterns conducive to concentrated goal directed activity have been developed. The desire to work for high academic performance should in turn be a function of the relevance of academic performance to more primary, long range goals. The nature of these goals may differ considerably between males and females. Motivational differences between males and females of varying ages have been reported in several studies (Cobb, 1954; Exline, 1960; Todd, Terrell & Frank, 1962). These differences, which indicate females to be more socially oriented than males, become interpretable if the different social roles ascribed to members of each sex are taken into account. That is, males typically aspire to a dominant career-oriented role in which personal achievement is greatly emphasized. Socially-oriented behavior may often be seen as irrelevant to, if not at odds with, the behavior required to fulfill this role. Females, on the other hand, generally aspire to a noncareer-oriented role, that of housewife or mother, to which personal achievement is not directly relevant. Moreover, for females socially oriented behavior -- which could take the form either of participation in formal social group activities or merely of warm supportive social relationships -- may be seen as necessary to successful fulfillment of their social role.

The factors associated with academic performance in males and females were expected to reflect the differences in orientation described above. Among males, academic performance was expected to increase with the degree to which achievement motivation was channelled into academic areas (e.g., in desire to seek and to receive academic recognition) and to which characteristics presumably facilitating concentrated goal-directed activity (perseverance, will power, certainty of vocational choice) had been developed. Among females, however, academic performance was anticipated to be relatively unaffected by factors indicating a desire for academic recognition per se. On the other hand, females with high social motivation were expected, if anything, to perform better than females low in social motivation due to the relevance of college to attainment of primary social goals. For example, females may feel that reasonably high academic performance will increase the likelihood of attracting an acceptable mate. Or, socially-oriented females may simply feel that social goals are more readily attainable in a college environment and believe that a reasonably high level of performance will allow them not only to remain in this environment but also to engage in social activities without restriction (e.g., probation, early hours, etc.).

The initial phase of the study gave primary consideration to the above propositions. Students, mainly college sophomores, were administered three types of questionnaires: a personality inventory assumed to measure certain characteristics relevant to socially-oriented and achievement-oriented behavior (warmth and sociability, will power, self-sufficiency, dominance, etc.); an inventory assessing acknowledged desires and expectancies associated with academic and social goals, and a brief questionnaire dealing with students' estimates of the certainty of their occupational choice, their interest in coursework, the relevance of coursework to future success, etc.. These variables were analyzed as a function of both aptitude and grade point average in a manner to be described.

2. Method

351 male and 225 female University of Colorado students, enrolled in the College of Arts and Sciences, were used as subjects. All students were at least in their sophomore year of college.

Academic performance (Per) was measured by cumulative grade point average at the time of the study. Academic aptitude (Apt) was measured by the combined verbal and mathematics scores on the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board. Both Per and Apt were converted to z-scores. Subjects were placed into categories defined by four combinations of Apt, Per and sex according to the following criteria:

1. High aptitude, high performance -- z scores of greater than .50 for both GPA and SAT, and an absolute difference between GPA and SAT z - scores of less than .25.

2. Low aptitude, low performance -- z-scores of less than -.50 for both GPA and SAT, and an absolute difference between GPA and SAT z-scores of less than .25.

3. High aptitude, low performance --an SAT z-score of greater than .50, a GPA z-score of less than -.50, and a difference between SAT and GPA z-scores of greater than 1.50.

4. Low aptitude, high performance --an SAT z-score of less than -.50, a GPA z-score of greater than .50, and a difference between GPA and SAT z-scores of greater than 1.50.

Subjects in the high aptitude, low performance group were considered to be underachievers; those in the low aptitude, high performance group were considered to be overachievers. Seven males and seven females were assigned to each of the above four groups.

Analyses of these groups of subjects represented a marked reduction in size compared to the total sample. This was felt to be justified ...

because it insured that Apt and Per were manipulated independently and that achievement level (the discrepancy between Per and Apt) could be controlled. It should be noted that selection of representatives of different combinations of Apt and Per without considering differences between these variables would not insure this independence. As a result of the positive correlation between Apt and Per, aptitude scores of low-Per, high-Apt subjects might be expected to cluster near the value separating high and normal Apt. These subjects may therefore differ substantially in aptitude from high-Per, high-Apt subjects, whose aptitude scores cover a wider range. In short, these groups might differ in mean aptitude despite being classified at the same level. Furthermore, representatives of a given combination of Apt and Per could differ substantially in achievement level as indicated by the discrepancy in standard scores between Per and Apt.

Personality Characteristics

Subjects were administered the Sixteen Personality Factor Questionnaire (16PF Test) constructed by Cattell, Saunders and Stice (1957). These factors and their behavioral correlates are described and interpreted in detail in the 16PF Handbook published by Cattell et al., the general characteristics associated with each factor are summarized for convenience.

16PF-A (Warmth, sociability vs. aloofness) -- Traits loading positively: good-naturedness, readiness to cooperate, attentiveness to people, adaptibility, kindness. Traits loading negatively: aggressiveness, obstructiveness, coolness, rigidity, suspiciousness. Persons high in this factor "express preference for occupations dealing with people, enjoy social recognition...". Persons low in this factor "like things or words, working alone, intellectual companionship, and avoidance of compromise."

16PF-B (general intelligence) -- No additional elaboration seems necessary. Cattell et al consider this to be a measure of general ability.

16PF-C (Emotional stability, maturity, ego strength vs. emotionality, instability)-- Traits loading positively: emotional maturity, emotional stability, coolness, realism, placidity. Traits loading negatively: low frustration tolerance, changeability in attitudes, evasiveness.

16PF-E (Dominance, ascendance vs. submissiveness) -- Traits loading positively: self-assurance, independence of mind, solemnity, unconventionality. Traits loading negatively: submissiveness, dependence, kindliness.

16PF-F (Enthusiasm, happy-go-luckiness vs. glumness, soberness) -- Traits loading positively: talkativeness, cheerfulness, serenity, alertness. Traits loading negatively: introspectiveness, depression, broodiness. "This is one of the most important components in extroversion... It is apparently the same dimension as the state of elatedness vs. depression...".

16PF-G (Superego strength, persistence vs. lack of rigid standards) -- Traits loading positively: perseverence, determination, responsibility, conscientiousness, attentiveness to people. Traits loading negatively: fickleness, frivolity, impatience, indolence, undependability. This factor is related to "success in a variety of performances requiring persistence, freedom from oscillation...".

16PF-H (Adventurousness vs. shyness, timidity) -- Traits loading positively -- adventurousness, interest in opposite sex, responsiveness, friendliness, impulsiveness. Traits loading negatively -- self-reliance, realism, hardness, self-sufficiency.

16PF-I (Sensitivity vs. toughness)-- Traits loading positively -- impatience, subjectivity, dependence, frivolousness, affectedness. Traits loading negatively -- self-reliance, hardness (to point of cynicism), practicalness.

16PF-L (Jealousy, suspiciousness vs. acceptance, adaptibility) -- Traits loading positively: jealousy, self-sufficiency, irritability, suspiciousness. Traits loading negatively: acceptingness, outgoingness, openness, cheerfulness.

16PF-M (Bohemian introversiveness, absentmindedness vs. practicality) -- Traits loading positively -- unconventionality, self-absorbtion, interest in art and theory, imaginativeness. Traits loading negatively -- alertness to practical needs, narrowness of interests, lack of spontaneity, practicality, earnestness.

16PF-N (Sophistication, polish vs. simplicity, unpretentiousness) -- Traits loading positively -- social alertness, aloofness, social discipline, insight regarding self and others. Traits loading negatively -- social clumsiness, warmth, gregariousness, simplicity, contentedness. There is "... initial evidence that it is associated with general mental alertness".

16PF-O (Timidity, insecurity vs. confidence) -- Traits loading positively -- anxiety, depression, sensitivity, moodiness, fussiness. Traits loading negatively -- self-confidence, cheerfulness, resilience, fearlessness.

16PF-Q1 (Radicalism vs. conservatism of temperament) -- "There is evidence that (persons high in this factor) are more well-informed, more inclined to experiment with problem solutions, less inclined to moralize, etc. The actual items express more interest in science than religion, more interest in analytical thought, in breaking the crust of custom and tradition."

16PF-Q2 (Self-sufficiency vs. group dependency) -- This factor "is one of the major factors in introversiveness. The items show a person who is resolute and accustomed to making his own decisions while (at the other pole) we see a person who goes with the group, definitely values social approval more".

16PF-Q3 (Controlled, exacting will power vs. lack of control, laxness) -- "According to loaded items, the (high Q3) persons shows socially approved character responses, self-control, persistence, foresight..."

16PF-Q4 (Tenseness, excitability vs. phlegmatism, composure) -- "...This factor can be confused with O though the factors are demonstrably distinct despite significant positive correlations. It involves being irrationally worried, tense, irritable, anxious and in turmoil!"

In interpreting results involving these factors, one should bear in mind the overlap in the traits loading on them. Relationships of several factors to the independent variables considered could be due primarily to the relationship to these variables of the test items common to these factors.

Based upon the above interpretations it was assumed that positive scores on Factors A, F and H, and a negative score on Factor Q2, indicate socially oriented behavior and interests. A high score on Factor L (jealousy) could also indicate a social orientation, but of a negative sort. Factors M and Q1 were assumed to reflect intellectual orientation due to the loadings of traits such as imaginativeness, creativity, unconventionality, interest in art and science, etc., on these factors. Factors G and Q3 were assumed to reflect characteristics conducive to effectiveness in goal seeking, while Factors O and Q4 were expected to have an adverse effect on goal-seeking effectiveness.

Academic and Social Motivation and Expectancies

Academic and social motivational characteristics were assessed primarily through use of a modified form of the Goal Preference Inventory developed by Liverant (1958). Motivation was assessed in three general areas:

1. Academic accomplishments: acknowledgement of competence in academic situations, approval, and admiration by others for academic behaviors, attainment of academic status, etc..

2. Social recognition -- acknowledgement of competence in social activities, approval and admiration by others for social accomplishments, attainment of social status, etc..

3. Social love and affection -- acceptance and positive regard by others in a social atmosphere, being valued as a friend in social activities, affiliation with a social group, etc..

Liverant's original questionnaire was modified to eliminate forced choice between pairs of items and thus to facilitate detection of equally high or low motivation in all areas. In addition, the inventory was expanded into 12 subscales to assess desire to seek goals in each of the three areas, expectancy to seek these goals, desire to attain these goals and expectancy to receive them.

The inventory consisted of 60 items; for each item, subjects were asked to record on a 5-point scale the extent of their desires and expectancies in the area referred to. The questionnaire is shown in Appendix A.

General Values

Subjects were also asked to complete a short questionnaire (Appendix B) in which they were asked to estimate on 4- or 5- point scales their admiration for academic vs. social traits, their interest in coursework, the certainty of their occupational choice, the relevance of coursework for both their future success and their future happiness, and the average number of dates per month.

3. Results and Discussion

Mean scores of subjects on all variables considered as a function of Apt, Per and sex, along with a summary of significant and near-significant effects, are shown in Tables 1-3. Data relevant to the 16PF inventory are presented in Table 1; data on likes and expectancies associated with academic and social goals in Table 2, and general questionnaire items in Table 3.

Sex

The following results involving sex were significant or approached significance:

1. Females were more warm and sociable (16PF-A) than were males ($p < .10$).
2. Males were more dominant (16PF-E) than were females.
3. Females had greater super-ego strength (15PF-G) than did males ($p < .10$).
4. Males were more radical in temperament (16PF-Q1) than were females ($p < .10$).
5. Females reported greater desire to receive social love and affection than did males ($p. < .10$).
6. Females reported greater expectancy to seek social recognition than did males.
7. Females admired social traits, relative to academic traits, more than did males.
8. Females reported having more dates per month than did males.

The assumption that females were more socially oriented than males was generally supported. Females tended to be more sociable, to have greater desire to receive social love and affection, to date more frequently, and to admire social traits more than did males. Dominance and radicalism, on the other hand, appeared to be less typical of females.

Females did not differ from males in their desire either to seek or to receive social recognition, but exceeded males in their expectancy to seek it. While females evidently do not have greater desire for social goals, they appeared more likely to acknowledge active pursuit of these goals. This may be because pursuit of social goals is considered to be more socially acceptable by females than by males, or because males, relative to females, prefer to limit the time they spend seeking social goals in order to concentrate upon academic goal seeking.

In considering the justification of the above interpretation, two things should be noted. First, males did not acknowledge greater expectancy to seek or to receive academic recognition than females. This could be due, however, to differences between males and females in the standards used to judge "recognition". If males are in fact relatively more achievement oriented, they may ascribe less recognition to a given event (e.g., a "B") than do females. Similarity in the desire to receive academic recognition may not necessarily indicate similarity in the level of academic performance expected or desired. Data obtained during the second phase of the study supports this view (cf. p.40).

Second, relationships pertaining to social love and affection did not parallel those involving social recognition. This fact emphasizes the conceptual difference between these two types of social goals. Social recognition

Table 1

16 PF Factors As a Function of Aptitude (Apt),

Performance (Per) and Sex

		Males			Females			F-ratios	
		Low Apt	High Apt	M	Low Apt	High Apt	M		
A. (Warmth, Sociability)								Sex(S)	3.94
	High Per	10.7	6.3	8.5	11.3	8.9	10.1	Apt(A)	7.92**
	Low Per	10.1	9.6	9.9	12.9	10.6	11.8	Per(P)	3.02
								S x A	.01
	M	10.4	8.0	9.2	12.1	9.8	11.0	S x P	.03
								A x P	1.34
								SxAxP	1.16
								MSe =	10.42
B. (General Inteligence)									
	High Per	8.9	10.9	9.9	9.9	9.7	9.8	Sex(S)	.96
	Low Per	9.1	10.6	9.9	8.1	10.0	9.1	Apt(A)	8.72**
								Per(P)	.67
	M	9.0	10.8	9.9	9.0	9.9	9.5	S x A	.97
								S x P	.67
								A x P	.67
								SxAxP	2.18
								MSe =	2.65
C. (Emotional Stability)									
	High Per	14.7	16.9	15.8	17.3	17.0	17.2	Sex(S)	1.72
	Low Per	17.0	16.7	16.9	17.9	17.7	17.8	Apt(A)	.26
								Per(P)	1.04
	M	15.9	16.8	16.4	17.6	17.4	17.5	S x A	.53
								S x P	.13
								A x P	.53
								SxAxP	.64
								MSe =	13.48
E. (Dominance)									
	High Per	12.0	13.4	12.7	8.0	10.1	9.1	Sex(S)	12.38**
	Low Per	12.3	13.6	13.0	7.0	10.9	9.0	Apt(A)	4.02*
								Per(P)	.00
	M	12.2	13.5	12.4	7.5	10.5	9.0	S x A	.57
								S x P	.03
								A x P	.13
								SxAxP	.18
								MSe =	16.51

Table 1 (cont.)

	Males			Females			F-ratios	
	Low Apt	High Apt	M	Low Apt	High Apt	M		
F. (Enthusiasm)								
High Per	15.7	16.4	13.6	14.0	15.3	14.7	Sex(S)	1.88
Low Per	12.9	15.6	14.3	15.6	16.4	16.0	Apt(A)	.01
							Per(P)	.92
M	14.3	13.5	13.9	14.8	15.9	15.4	S x A	.79
							S x P	.12
							A x P	2.48
							SxA x P	3.17
							MSe =	15.22
G. (Super-ego strength)								
High Per	12.3	13.1	12.7	13.3	13.7	13.5	Sex(S)	3.65
Low Per	12.7	11.0	11.9	14.4	14.1	14.3	Apt(A)	.05
							Per(P)	.00
M	12.5	12.1	12.3	13.9	13.9	13.9	S x A	.09
							S x P	.95
							A x P	.95
							SxAxP	.30
							MSe =	9.90
H. Adventurousness								
High Per	11.0	15.7	13.4	12.9	13.4	13.2	Sex(S)	.00
Low Per	14.6	15.3	15.0	14.3	16.3	15.3	Apt(A)	1.49
							Per(P)	1.28
M	12.8	15.5	14.2	13.6	14.9	14.3	S x A	.19
							S x P	.03
							A x P	.15
							SxAxP	.69
							MSe =	37.58
I. (Sensitivity)								
High Per	10.6	11.6	11.1	12.9	13.0	12.7	Sex(S)	1.68
Low Per	11.3	11.9	11.6	12.0	12.9	12.2	Apt(A)	.53
							Per(P)	.00
M	11.0	11.8	11.4	12.2	12.7	12.5	S x A	.03
							S x P	.32
							A x P	.08
							SxAxP	.01
							MSe =	10.90
L. (Jealousy)								
High Per	7.6	6.7	7.2	8.4	8.6	8.5	Sex(S)	.48
Low Per	10.3	8.4	9.4	6.7	6.7	6.7	Apt(A)	.48
							Per(P)	.05
M	9.0	7.6	8.3	7.6	7.7	7.6	S x A	.60
							S x P	4.68*
							A x P	.10
							SxAxP	.05
							MSe =	11.97

Table 1 (cont.)

	Males			Females			F-ratios	
	Low Apt	High Apt	M	Low Apt	High Apt	M		
M. (Bohemian Introversion)								
High Per	12.7	13.0	12.9	9.7	13.6	11.7	Sex(S)	.72
Low Per	10.1	14.1	12.1	8.7	14.0	11.4	Apt(A)	8.07**
							Per(P)	.18
M	11.4	13.5	12.5	9.2	13.8	11.5	S x A	1.06
							S x P	.03
							A x P	1.18
							SxAxP	.23
							MSe =	19.50
N. (Sophistication, polish)								
High Per	8.6	10.9	9.8	8.4	10.3	9.4	Sex(S)	.10
Low Per	9.1	10.0	9.6	9.7	10.9	10.3	Apt(A)	7.59**
							Per(P)	.50
M	8.9	10.5	9.7	9.1	10.6	9.9	S x A	.00
							S x P	.92
							A x P	.92
							SxAxP	.10
							MSe =	4.35
O. (Timidity, Insecurity)								
High Per	14.0	11.0	12.5	16.0	11.9	14.0	Sex(S)	.64
Low Per	13.1	10.9	12.0	13.7	11.1	12.4	Apt(A)	6.65*
							Per(P)	.74
M	13.6	11.0	12.3	14.9	11.5	13.2	S x A	.09
							S x P	.18
							A x P	.24
							SxAxP	.03
							MSe =	18.83
Q1. (Radicalism of temperament)								
High Per	10.9	12.1	11.5	8.9	11.9	10.4	Sex(S)	3.53
Low Per	7.9	13.0	10.5	8.0	10.1	9.1	Apt(A)	18.93**
							Per(P)	3.14
M	9.4	12.6	11.0	8.5	11.0	9.8	S x A	.23
							S x P	.03
							A x P	1.27
							SxAxP	3.14
							MSe =	6.19
Q2. (Self-sufficiency)								
High Per	11.9	13.0	12.5	9.7	9.7	9.7	Sex(S)	4.28*
Low Per	9.4	10.0	9.7	8.4	10.7	9.6	Apt(A)	.14
							Per(P)	4.28*
M	10.2	11.5	11.1	9.1	10.2	9.7	S x A	.04
							S x P	3.50
							A x P	.37
							SxAxP	1.07
							MSe =	6.67

Table 1 (cont.)

	Males			Females			F-ratios	
	Low Apt	High Apt	M	Low Apt	High Apt	M		
Q3. (Controlled willpower)								
High Per	12.7	12.3	12.5	9.3	10.1	9.7	Sex(S)	.65
Low Per	9.7	10.1	9.9	11.4	11.1	11.2	Apt(A)	.03
							Per(P)	.32
M	11.2	11.2	11.2	10.4	10.6	10.5	S x A	.02
							S x P	5.48*
							A x P	.00
							SxAxP	.31
							MSe =	10.96
Q4. (Tenseness, excitibility)								
High Per	14.3	10.9	12.6	15.4	14.1	14.8	Sex(S)	2.20
Low Per	14.4	13.1	13.8	15.0	14.3	14.7	Apt(A)	2.63
							Per(P)	.27
M	14.4	12.0	13.2	15.2	14.2	14.7	S x A	.43
							S x P	.43
							A x P	.43
							SxAxP	.14
							MSe =	14.98

* $p < .05$
** $p < .01$

Table 2

Desires and Expectancies Associated with Academic and Social Goals as a Function of Aptitude(Apt), Performance (Per) and Sex

	Males			Females			F-ratios	
1. Desire to Seek Goals	Low	High	M	Low	High	M		
a. Academic recognition(AR)								
High Per	50.7	57.3	54.0	53.0	54.4	53.7	Sex(S)	.00
Low Per	48.7	51.7	50.2	52.6	48.9	55.8	Apt(A)	.72
							Per(P)	2.48
M	49.7	54.5	52.1	52.8	51.7	54.8	S x A	1.89
							S x P	.03
							A x P	1.02
							SxAxP	.03
							MSe =	64.96
b. Social recognition (SR)								
High Per	42.1	47.2	44.7	45.4	45.2	45.3	Sex(S)	1.94
Low Per	38.9	42.1	40.5	51.3	38.4	44.9	Apt(A)	.71
							Per(P)	1.67
M	40.5	44.7	42.6	48.4	41.8	45.1	S x A	7.06*
							S x P	.56
							A x P	2.96
							SxAxP	2.22
							MSe =	54.40
c. Social love and affection (SLA)								
High Per	41.4	43.7	42.6	43.0	40.6	41.8	Sex(S)	.81
Low Per	40.9	40.1	40.5	43.9	45.7	44.8	Apt(A)	.01
							Per(P)	.06
M	41.2	41.9	41.6	43.5	43.2	43.3	S x A	.08
							S x P	1.69
							A x P	.03
							SxAxP	.87
							MSe =	53.18

Table 2 (cont.)

	Males			Females			F-ratios	
2. Desire to Receive Goals	Low Apt	High Apt	M	Low Apt	High Apt	M		
a. Academic recognition								
High Per	55.9	58.4	57.2	54.5	55.4	55.0	Sex(S)	.10
Low Per	53.3	56.5	54.9	57.6	58.0	57.8	Apt(A)	.78
							Per(P)	.01
M	54.6	57.5	56.1	56.1	56.7	56.4	S x A	.23
							S x P	2.46
							A x P	.01
							SxAxP	.01
							MSe =	44.10
b. Social recognition								
High Per	49.2	49.9	49.6	48.3	50.0	49.2	Sex(S)	.04
Low Per	45.5	52.2	48.9	56.0	45.5	50.8	Apt(A)	.03
							Per(P)	.13
M	47.4	51.2	49.3	52.2	47.8	50.0	S x A	3.60
							S x P	.28
							A x P	.43
							SxAxP	4.43*
							MSe =	66.15
c. Social love and affection								
High Per	48.1	48.1	48.1	53.6	53.4	53.5	Sex(S)	3.76
Low Per	47.4	47.4	47.4	53.4	51.0	52.2	Apt(A)	.06
							Per(P)	.15
M	47.8	47.8	47.8	53.5	52.2	52.9	S x A	.06
							S x P	.01
							A x P	.05
							SxAxP	.05
							MSe =	95.71
3. Expectancy to Seek Goals								
a. Academic recognition (AR)								
High Per	51.7	53.4	52.6	54.0	49.9	52.0	Sex(S)	.46
Low Per	50.3	48.7	49.5	48.6	45.6	47.1	Apt(A)	.65
							Per(P)	3.23
M	51.0	51.1	51.1	51.3	47.8	49.6	S x A	.69
							S x P	.17
							A x P	.06
							SxAxP	.20
							MSe =	69.39
b. Social recognition								
High Per	38.3	37.3	37.8	42.0	40.3	41.2	Sex(S)	11.19**
Low Per	36.1	38.7	37.5	42.4	40.8	41.6	Apt(A)	2.04
							Per(P)	.23
M	37.2	38.0	37.6	42.2	40.6	41.4	S x A	2.64
							S x P	.80
							A x P	.06
							SxAxP	.47
							MSe =	52.81

Table 2 (cont.)

	Males			Females			F-ratios	
c. Social love and affection	Low Apt	High Apt	M	Low Apt	High Apt	M		
High Per	47.2	45.9	46.6	46.7	46.8	44.3	Sex(S)	.25
Low Per	45.4	45.0	45.8	45.8	45.4	45.6	Apt(A)	.79
							Per(P)	.00
M	46.3	45.5	45.9	46.3	43.6	45.0	S x A	.27
							S x P	.49
							A x P	.55
							SxAxP	.17
							MSe =	51.05
4. Expectancy to Receive Goals								
a. Academic recognition (AR)								
High Per	39.9	44.0	42.0	40.1	44.7	42.4	Sex(S)	.02
Low Per	39.0	40.1	39.6	38.1	38.6	38.4	Apt(A)	1.77
							Per(P)	2.79
M	39.5	42.1	40.8	39.1	41.7	40.4	S x A	.00
							S x P	.18
							A x P	.84
							SxAxP	.02
							MSe =	52.21
b. Social recognition								
High Per	38.7	38.0	38.4	41.3	37.9	39.6	Sex(S)	.47
Low Per	37.9	42.7	40.1	43.1	46.1	42.1	Apt(A)	.02
							Per(P)	.10
M	38.3	40.4	39.3	42.2	39.5	40.9	S x A	1.15
							S x P	.02
							A x P	.61
							SxAxP	.21
							MSe =	68.59
c. Social love and affection								
High Per	42.6	41.6	42.1	45.3	44.3	44.8	Sex(S)	1.16
Low Per	43.7	44.5	44.1	46.6	43.1	44.9	Apt(A)	.54
							Per(P)	.41
M	43.2	43.1	43.1	45.0	43.7	44.9	S x A	.45
							S x P	.37
							A x P	.01
							SxAxP	.45
							MSe =	35.83

* $p < .05$
** $p < .01$

Table 3

General Questionnaire Items as a Function of Aptitude (Apt), Performance (Per) and Sex

		Males			Females			F-ratios	
		Low Apt	High Apt	M	Low Apt	High Apt	M		
1. Admiration for Social(vs. Academic) traits									
	High Per	2.3	1.4	1.9	2.6	2.4	2.5	Sex(S)	4.71*
	Low Per	2.4	1.9	2.2	2.3	2.3	2.3	Apt(A)	4.71*
								Per(P)	.04
	M	2.4	1.7	2.1	2.5	2.4	2.4	S x A	3.15
								S x P	1.91
								A x P	.35
								SxAxP	.04
								MSe =	.458
2. Number of dates per month									
	High Per	4.9	4.1	4.5	10.4	8.4	9.4	Sex(S)	14.12*
	Low Per	6.9	4.7	5.8	12.1	12.9	12.5	Apt(A)	.45
								Per(P)	1.98
	M	5.9	4.4	5.2	11.3	10.7	11.0	S x A	.06
								S x P	.33
								A x P	.04
								SxAxP	.45
								MSe =	33.61
3. Importance of college to future success									
	High Per	3.3	3.4	3.3	3.3	3.6	3.5	Sex(S)	.10
	Low Per	3.3	3.3	3.3	3.1	3.0	3.1	Apt(A)	.10
								Per(A)	.91
	M	3.3	3.3	3.3	3.2	3.3	3.3	S x A	.00
								S x P	.40
								A x P	.40
								SxAxP	.10
								MSe =	.708
4. Importance of college to future happiness									
	High Per	3.0	3.3	3.2	3.7	3.6	3.7	Sex(S)	.69
	Low Per	3.3	3.1	3.2	3.1	3.2	3.2	Apt(A)	.25
								Per(P)	1.34
	M	3.2	3.2	3.2	3.4	3.4	3.4	S x A	.69
								S x P	2.23
								A x P	.69
								SxAxP	.03
								MSe =	.649

Table 3 (cont.)

	Males			Females			F-ratios	
5. Interest in Course Work	Low Apt	High Apt	M	Low Apt	High Apt	M		
High Per	2.58	3.14	2.86	2.57	2.86	2.72	Sex(S)	.82
Low Per	3.14	2.14	2.64.	2.57	2.29	2.43	Apt(A)	.30
							Per(P)	1.61
M	2.86	2.64	2.75	2.57	2.58	2.58	S x A	.30
							S x P	.03
							A x P	7.42**
							SxAxP	1.61
							MSe =	.542
6. Certainty of Occupational Choice								
High Per	1.9	2.4	2.2	1.6	2.7	2.2	Sex(S)	.96
Low Per	2.4	2.7	2.6	2.7	1.4	2.1	Apt(A)	.49
							Per(P)	.49
M	2.2	2.6	2.4	2.2	2.1	2.1	S x A	1.44
							S x P	1.44
							A x P	7.05**
							SxAxP	4.39*
							MSe =	.916

* $p < .05$
** $p < .01$

pertains to social status and leadership, while social love and affection pertains to social affiliation and acceptance as a friend. Desire for social love and affection was somewhat greater among females than among males as might be expected from their greater warmth and sociability. However, sexes did not differ in the expectancy or the desire to seek goals actively in this area. Since males are apparently more assertive and independent than females, this was somewhat surprising. Possibly females as well as males are fairly unwilling to pursue these goals actively, or at least to admit to this activity.

Aptitude

The following results involving aptitude attained significance:

1. 16PF-A (warmth, sociability) was related negatively to Apt.
2. 16PF-B (general intelligence) was related positively to Apt.
3. 16PF-E (dominance, ascendance) was related positively to Apt.
4. 16PF-M (bohemian introversion, intellectualism) was related positively to Apt.
5. 16PF-N (shrewdness, sophistication, polish) was related positively to Apt.
6. 16PF-O (timidity, insecurity) was related negatively to Apt.
7. 16PF-Q1 (radicalism of temperament) was related positively to Apt.
8. Aptitude and sex had interactive effects on desire to seek social recognition; desire to seek social recognition increased with Apt among males but decreased with Apt among females.
9. Admiration for academic (as opposed to social) traits was related negatively to Apt; this relationship was pronounced only among males.

The above results indicated that high aptitude students were relatively higher in characteristics reflecting an intellectual orientation (e.g., intellectualism, radicalism, and admiration for academic traits). However, no differences occurred as a function of aptitude in characteristics reflecting achievement-oriented behavior not directly dependent upon intrinsic intellectual interest (e.g. conscientiousness and perseverance, will power, and desires and expectancies associated with attainment of academic recognition). High-Apt students were relatively higher in dominance (16PF-E); however, this in conjunction with their lower insecurity (16PF-O) may indicate merely that they are generally more self-confident in responding to their environment than are low aptitude students.

Students with low aptitude tended to be relatively high in characteristics reflecting social orientation (warmth and sociability, group dependence, admiration for social traits and, among females, desire to seek social recognition). The fact that desires to receive social love and affection and social recognition were both unrelated to aptitude suggests that high and low aptitude subjects do not differ in their interest in attaining social goals but may only differ in behavioral characteristics that affect their attainment. An indication that high aptitude students, although possibly more socially autonomous than low aptitude students, are not insensitive to their social environment is their significantly higher score in 16PF-N, which Cattel, et al (1957) interpret as a measure of sophistication and polish. Insightfulness concerning both oneself and others are among the traits loading on this factor.

While it is not particularly surprising that high and low aptitude students differed in the magnitude of their intellectual and social orientation, the reason for this difference is not completely clear. The finding that intellectual interests and behaviors are more predominant among high aptitude students than among low aptitude students, presumably as a result of their relatively greater frequency of reinforcement in intellectual areas, seems trivial. However, it does not necessarily follow that high-Apt students are relatively lower in socially-oriented behavioral characteristics. At least three reasons for this seem plausible.

1. Persons may develop socially-oriented behaviors only if they depend upon other persons for goal attainment. Students of high aptitude are possibly better able to attain goals without the assistance of other persons, and therefore orient less toward these persons. On the other hand, persons with low ability may be more dependent upon their social environment for goal attainment and therefore develop behavioral characteristics (conventionality, sociability, submissiveness, etc.) that facilitate goal attainment through other persons.

2. Parents and teachers may differentially reinforce socially-oriented and intellectually-oriented behaviors in persons who differ in ability. Those who realize that a child is highly intelligent may reward interest in intellectual activity but discourage socially-oriented activity that they believe will conflict with the attainment of intellectual goals. On the other hand, those who realize that a child has relatively low ability may minimize the importance of intellectual interests and instead may encourage and reward goal seeking behavior in nonintellectual (e.g. social) areas.

3. Persons with high intellectual ability, who are able to succeed in academic environments fairly easily, may not be as well accepted socially as persons with lower ability. Substantial pressures toward conformity and conventionality are placed upon children during secondary school years. Those persons who necessarily stand out as different by virtue of their generally high intelligence and good grades in school may not be as well accepted by peers and, more particularly, may not be rewarded for socially oriented behavior. These persons may therefore not develop the socially oriented behaviors typically rewarded in social relationships and may restrict their activity to intellectual areas in which reinforcement is relatively more frequent.

Which of the above speculations is most likely correct cannot be determined on the basis of data presented here. However, since neither the desire to receive social goals nor social group dependence (16PF-Q2) differs as a function of aptitude, and since high-Apt students may actually be more sensitive to their social environment (16PF-N) than low-Apt students, the first of the above interpretations may be less justifiable than either of the other two.

None of these interpretations explains the finding that the desire to seek social recognition was related positively to aptitude among males but was related negatively to aptitude among females.

It is of interest that Factor O, which presumably measures self-confidence, was strongly related to aptitude but not to performance. One implication of this may be that anxiety or insecurity is not in itself a cause of poor performance, but rather may be an effect of low aptitude. That is, it is not that students who become anxious in academic situations perform poorly,as is sometimes assumed, but rather that students who believe (with justification) that they may not have the ability to perform well tend to become anxious. (Support for this interpretation was also found in the second phase of this study (p.116)).

Implicit in the above interpretations is the somewhat tenuous assumption that aptitude as measured in this study is an antecedent and not an effect of the personality and motivational characteristics related to it. The latter possibility cannot be discarded. In few cases were 16PF factors significantly related to both aptitude and performance. This may indicate, however, that personality characteristics that are conducive to development of general academic skills (as inferred from SAT scores) are not those that affect performance on tests requiring knowledge of specific information and use of specific skills (as inferred from GPA). Quite possibly, characteristics such as intellectualism, dominance, radicalism, etc., are conducive to the development of general intellectual abilities while, alternatively, a high degree of sociability, conservatism and submissiveness may interfere with development of these skills.

Performance

The following results involving performance were obtained (p.<.05 unless otherwise indicated):

1. 16PF-A (warmth, sociability) was related negatively to Per among students with high Apt but not among those with low Apt. More specifically, high-Apt, high-Per subjects were lower in this factor than subjects not fitting this description.

2. The Apt x Per x sex interaction effect on 16PF-F (enthusiasm, happy-go-luckiness) approached significance (p<.10). Females were generally high in this factor while among males both overachieving (low-Apt, high-Per) and underachieving (high-Apt, low-Per) subjects were higher than other groups.

3. Performance interacted with sex in analyses of 16PF-L (jealousy, suspicion). Jealousy was related negatively to Per among males but was related positively to Per among females. This relationship occurred at both levels of Apt.

4. The Apt x Per x sex interaction effect on 16PF-Q1 (radicalism) approached significance (p<.10). Among low-Apt males, Per was related positively to this factor; among females and high-Apt males, this relationship was not significant.

5. 16PF-Q2 (self-sufficiency, social group independence) was related positively to Per. Simple effects analyses of the nearly significant (p<.10) Per x sex interaction indicated that this relationship was strongest among males.

6. Per and sex had interactive effects on 16PF-Q3 (controlled willpower, perseverance); this factor was related positively to Per among males but not among females.

7. Desire to seek academic recognition was related positively to Per among students with high Apt ($p<.10$). While this relationship only approached significance, it occurred both among males and among females.

8. Expectancy to seek academic recognition was related positively to Per at each of the four combinations of sex and Apt; this relationship, however, only approached significance ($p<.10$).

9. Expectancy to receive academic recognition was related positively to Per at all four combinations of sex and Apt; this relationship only approached significance ($p<.10$).

10. The effect of Per on desire to seek social recognition was contingent upon Apt ($p<.10$). Among high-Apt subjects, desire to seek social recognition was related positively to Per; among low-Apt subjects, this was not reliably the case.

11. The triple interaction of Apt, Per and sex on desire to receive social recognition was significant. The significance of the interaction is due to sex differences in the effects of aptitude among low performers. High-Apt, low-Per males acknowledged greater desire to receive social recognition than did low-Apt, low-Per males; however, high-Apt, low-Per females reported lower desire to receive social recognition than did low-Per, low-Apt females.

12. The relationship between Per and interest in coursework was contingent upon Apt. Among high-Apt students, interest in coursework was related positively to Per. Amont low-Apt students, however, interest was related nonsignificantly negatively to Per.

13. The triple interaction of Apt, Per and sex on certainty of occupational choice was significant. Among males at both levels of Apt and females with low Apt, certainty of choice was related positively to Per. However, among high-Apt females a negative relationship occurred. Female overachievers and female underachievers were more certain of their occupational choice than were normal achieving females at both levels of Apt.

Variables that reflect an interest in academic and vocational goals, and personality factors that indicate behavior conducive to concentrated achievement-related activity, were expected to be related positively to performance among males but not among females. On the other hand, indications of a strong social orientation were hypothesized to be related positively to performance among females but not among males. While the expected interactions of Per and sex on the desire to receive academic and social-recognition and social love and affection were not significant, several results obtained were consistent with these hypotheses.

Both overachieving and underachieving females were more certain of their occupational choice than females whose performance was commensurate with their ability. This could indicate that underachieving females may have definitely decided upon homemaking as an ultimate vocational goal and therefore have little need to attain academic goals that are irrelevant to this role. On the other hand, overachieving females may be those who have decided upon careers outside the home that require academic competence. It is noteworthy that among males, whose career goals may more typically require academic competence, overachievers were also more certain of their occupational choice than other groups while underachievers were slightly less certain of their choice than other groups.

Willpower (16PF-Q1) was related positively to academic performance among males but had an opposite relationship to Per among females. For males, who may be inspired to seek academic performance by desire for long-range vocational goals, perseverance and self-control may be beneficial to academic effectiveness. However, similar characteristics among females may direct them toward the pursuit of nonacademic goals resulting in a decrement in their performance.

While results were not significant, data pertaining to desire to receive academic recognition are also worth noting in this regard. Among males at both levels of aptitude the attainment of academic goals (Per) appeared to increase with the desire to attain them. Among females, however, desire to receive academic recognition was higher among low performers than among high performers at both aptitude levels. This is consistent with the speculation that academic performance is typically not intrinsically desired by females. A certain level of performance may be required in order to remain in college and have the opportunity to seek and receive social goals. High performing females, who are not in danger of being dropped from college do not manifest any desire for academic recognition. However, low performers, for whom the need to attain at least a minimum level of performance is more salient, may acknowledge greater desire to attain academic goals.

It is important to bear in mind that a substantial proportion of males as well as females may have relatively high social motivation. The fact that males and females did not differ substantially in the magnitude of their acknowledged desire for social goals emphasizes this. Among males, however, high social motivation may adversely affect academic striving for at least two reasons. First, males may believe that social involvement conflicts with active striving for the performance level required for long-range vocational goal attainment. Second, some socially motivated and socially conscious males may perceive active pursuit of academic goals (e.g., studying) as not socially desirable. Indicative of the latter possibility is the finding in the second phase of the study that, along the personality dimensions "studious", were correlated .542 with self-acceptance along this dimension among 250 randomly selected freshman females, but were correlated only .342 among 250 freshman males. The difference between these correlations, which is significant ($z = 2.77$, $p < .01$), implies that while females tend to accept themselves more as they perceive themselves as more studious, a large proportion of males either may see academic striving (studiousness) as not socially acceptable, or may accept themselves even though they judge themselves to be low in this trait. Therefore, the desire to attain academic goals may be similar among all male students due to the relevance of these goals to vocational success; however, the desire and expectancy to seek academic goals may vary inversely with the degree to which a social stigma is felt to accompany active pursuit of these goals.

If males feel a conflict between social and academic interests, those who are socially oriented may be relatively low in academic achievement. However, if females feel that academic performance facilitates social goal attainment, those with a strong social orientation may have relatively high academic performance. Several results suggest that this may be true. For example, self-sufficiency (social group independence) was related positively to performance among males but was unrelated to performance among females. Second, underachieving males had higher desire to receive social recognition than males described by any other combination of aptitude and performance, while underachieving females had lower desire to receive social recognition than females not fitting this description. This latter finding suggests that socially oriented males do not perform up to their capabilities while socially oriented females perform relatively well. The finding that jealousy was related negatively to performance among males but was related positively to performance among females is also consistent with the speculation that concern with one's social environment (in this case, high jealousy) facilitates academic effectiveness among females. (A second implication of this specific finding was tested in the supplementary research described at the end of this chapter.)

Not all of the results obtained during this phase of the study were consistent with the general interpretation described above. For example, warmth and sociability (16PF-A), interpreted as an index of social orientation, was related negatively to performance not only among high aptitude males, but also, nonsignificantly, among high aptitude females. It is also curious that questionnaire items pertaining to the importance of coursework to future success or future happiness were not significantly related to performance among males and females respectively.

Data pertaining to 16PF-F (enthusiasm, happy-go-luckiness) were also difficult to interpret. Males who performed at a level commensurate with their aptitude scored lower in this factor than did male underachievers, male overachievers, or females at any combination of Apt and Per. If this factor indicates extroversion and socially-oriented behavior, the fact that male underachievers are relatively high in happy-go-luckiness is consistent with the speculation that among males extroversiveness, which may interfere with concentrated academic goal-directed activity, is detrimental to performance. However, the finding that overachievers are high in this factor is surprising. Perhaps the enthusiasm acknowledged by overachieving males is channelled into academic rather than nonacademic pursuits. Among females, who were relatively high in this factor regardless of their achievement level, this does not appear to be the case.

Among high aptitude students, performance was positively related to interest in coursework, while among low aptitude students a negative relationship occurred. Students with high ability appear to perform well to the extent that they have intrinsic interest in the course material. High grades among students of low ability, however, appear due to factors other than interest in the material. In fact, overachievers of low ability may expend so much effort in attaining a high level of performance that academic oriented behavior, and also the coursework toward which this behavior is directed, actually becomes aversive to them.

4. Supplementary Analysis

Relationship of Aggression to Academic Effectiveness

The interactive relationship of performance and sex to jealousy (16PF-L) had implications that were felt to warrant further investigation. The negative relationship of jealousy to performance among females suggested that, for these students, frustration in social areas gave rise to hostility that was displaced, in the form of competitiveness, into academic goal-seeking activity. Among males, however, this description would be inappropriate. In a separate study, indexes of manifest hostility were obtained from a subsample of the 576 students investigated during this phase of the research. This information allowed the relationship of direct and indirect aggressive expression to academic achievement to be investigated in more detail.

The rationale underlying this research, which has been reported elsewhere (Wyer, Weatherley & Terrell, 1965) may be outlined briefly. Hostility may often be indicated both by acknowledged feelings of aggression and by overt acts of aggression. Furthermore, hostility may not always be manifested directly. Aggression-linked anxiety, or guilt, is a by-product of the socialization of aggression, and the anticipation of a guilt reaction often prevents aggressive expression. As a result, aggressive impulses may often be channeled into forms of behavior in which the aggressive component is not obvious. Competition for academic goals, which may be an important factor under-lying academic achievement, can serve as a vehicle for expressing aggression in a constructive, socially useful manner. However, academic competitiveness may play a different role for males than for females in expressing aggressive tendencies.

Males, who relative to females are expected to fill a dominant social role, may be encouraged to develop behavior patterns in early years that involve aggressive expression. For example, fighting is a recognized aspect of male social development, and success in this area may be regarded as an indication of dominance and masculinity. Athletics is a second area in which forms of aggression have a positive social value among males. In the vocations ultimately aspired to by males, competitiveness and aggressiveness also tend to be positively valued characteristics. High aggression may therefore reflect a high need for dominance that is manifested in all areas relevant to fulfilling the masculine social role. To the extent that vocational success is valued by male college students, and academic competence is seen as relevant to this success, uninhibited aggressive tendencies in these students should be related positively to academic achievement. Such freedom of aggressive expression may be indicated by the combination of high acknowledged acts and feelings of aggression may be indicated by the combination of high acknowledged feelings and acts of aggression and low acknowledged guilt over aggression. On the other hand, either low acknowledged aggression or high guilt over aggressive expression may indicate a failure to adopt the dominant male role and may therefore be associated with a lesser degree of academic effectiveness.

Acknowledgment of hostility and aggression is much less consistent with the female social role than with the male role. If aggression conflicts with feminine social role behavior and prevents the attainment of role-relevant goals, females may typically channel their aggressive tendencies into areas that do not conflict with, but may even facilitate, primary goal attainment. Academic goal-seeking may be one such area, since aggressive tendencies can be sublimated through competitiveness in academic areas without contradicting female role expectancies.

Low acknowledged aggressive expression together with guilt over aggression may indicate a disposition toward displaced aggression. In such a case, high guilt may be the cause of low expression of aggression and therefore may amplify the tendency to displace aggression. On the other hand, low acknowledged aggression in conjunction with low guilt may indicate a low need for any form of aggressive expression. Therefore, if academic effectiveness is a result of aggression displaced into academic goal seeking, females with both low acknowledged aggression and high guilt over aggression should have higher effectiveness than females not fitting this description.

The following hypotheses were therefore tested:

1. Males will exceed females in acknowledged expression of aggression while females will exceed males in their acknowledged guilt over aggression.

2. Males who are both high in acknowledged expression of aggression and low in guilt over aggressive expression will have higher academic effectiveness than males not fitting this description.

3. Females who are both low in acknowledged expression of aggression and high in their guilt over aggressive expression will have higher academic effectiveness than females not fitting this description.

Method

45 male and 48 female college students who had been administered the Siegel (1956) Manifest Hostility Scale (MHS) were selected from the sample of 556 students who had participated in this phase of the research. To test hypotheses considered in this part of the study, it was necessary to use academic achievement as a dependent variable rather than infer it on the basis of combinations of independent variables. It was therefore defined operationally as the difference in standard scores between performance (grade point average) and aptitude (SAT score).

Although this procedure yielded a normal distribution of academic achievement scores in the total sample in which the scores were computed, the scores of the subsamples selected for this study did not mirror this normality. Specifically, male subjects were fairly equally distributed over the range of effectiveness, while a disporportionately low number of females were in the middle range of achievement (within one sigma of the mean).

From the MHS three subscales were constructed by having judges sort the items into categories reflecting (1) the tendency to commit acts of aggression, (2) the tendency to experience feelings of aggression, and (3) the absence of guilt associated with aggression. The items comprising these scales are shown in Appendix C. The first two subscales were assumed to be indexes of a readiness to acknowledge aggression, and therefore to express this aggression directly; a moderate correlation was found between these scales ($r_{12} = .476$). The Absence of Guilt subscale was assumed to indicate a tendency to inhibit direct aggression or to displace aggression; this scale was relatively independent of the other two ($r_{13} = .229$, $r_{23} = .278$).

Results

Table 4 shows comparisons of males and females on each of the aggression characteristics assessed in this study. Hypothesis 1 was supported by these data. Males acknowledged significantly more aggressive acts and showed significantly less guilt over aggression (that is, more absence of guilt). No sex difference occurred in acknowledgement of feelings of aggression.

To test Hypotheses 2 and 3, subjects were divided into levels above and below the median on each of the three aggression scales. To test Hypothesis 2, males both high in acknowledged acts of aggression and low in acknowledged guilt over aggression were compared in academic effectiveness with the residual. To test Hypothesis 3, females both low in acts of aggression and high in aggressive guilt were compared with the residual. The combined effects of guilt and acknowledged feelings of aggression on academic achievement were also investigated.

Mean academic effectiveness scores for each combination of direct aggressive expression (acts of aggression or acknowledged feelings of aggression) and guilt over aggression are shown for males in Tables 5 and 6, and for females in Tables 7 and 8. Scores are in units of standard deviation from the mean. Males who acknowledged either a tendency to commit aggressive acts or high aggressive feelings, and who were low in acknowledged guilt over aggression, were higher in academic effectivness than were other male subjects. Hypothesis 2 was therefore supported. Hypothesis 3, that females who were both low in acknowledged acts and feelings of aggression and high in guilt over aggression would have higher academic achievement than other subjects, was not convincingly supported, although the results approached significance ($p. < .10$) in both comparisons made.

Discussion

While males and females differed as expected in their acknowledgment of aggressive acts and their guilt over aggressive expression, they did not differ significantly in acknowledged feelings of aggression. These findings in conjunction suggest that although males and females have similar aggressive feelings, males express this aggression directly without guilt while females typically feel guilt over these feelings and hence inhibit direct aggressive expression.

Among females who were low in their acknowledgment of aggressive acts, those high in guilt over aggression were, as hypothesized, higher in academic achievement than subjects in any other category defined by these variables (.23 SD above the mean). However, those females low in both guilt and aggressive acts were markedly low in achievement (.41 SD below the mean). Although the mean of neither of these groups differed from the residual at the accepted level of significance ($p < .10$ in both cases), the differences obtained are sufficient to suggest that future studies on a larger sample would substantiate these relationships. The combination of low direct aggressive expression and low guilt may indicate a low need for both direct and indirect aggression. To this extent, data indicate that academic achievement among females may suffer when aggressive impulses are very low. Academic goal attainment may require a certain amount of competitiveness that is lacking among femeles with low aggressive tendencies.

Table 4

Mean Scores on Aggression Variables of Males and Females

Variable	Males (n = 45)	Females (n = 49)	t
Manifest Hostility Scale (full scale)	15.8	12.2	2.79**
Acts of aggression	4.69	3.77	2.28**
Feelings of aggression	4.58	4.40	.42
Absence of guilt over aggression	1.73	.87	3.79**

* p<.025, one-tailed.
** p<.01, one-tailed.

Table 5

Mean Academic Effectiveness for Males at Two Levels of Acknowledgment of Acts of Aggression and Guilt Over Aggression

Acknowledgment of aggressive acts	Guilt over aggression	
	High	Low
High	-.54 (8)	.37^{a} (15)
Low	-.26 (13)	-.26 (9)

Note: N in each cell is given in parentheses.

[a] t = 2.38, df = 43, p<.025 (one-tailed test) when this mean is compared with the mean of the other three cells combined.

Table 6

Mean Academic Effectiveness for Males at Two Levels of Feelings of Aggression and Guilt Over Aggression

Feelings of aggression	Guilt over aggression	
	High (above median)	Low (below median)
High (above median)	.04 (8)	.35^{a} (13)
Low (below median)	-.63 (13)	-.11 (11)

Note: N in each cell is given in parentheses.

[a] t = 1.33, df = 46, p<.10(one-tailed test) when the mean is compared with the mean of the other three cells conbined.

Table 7

Mean Academic Effectiveness for Females at Two Levels of Acknowledgement of Acts of Aggression and Guilt Over Aggression

	Guilt over aggression	
Acknowledgement of aggressive acts	High (above median)	Low (below median)
High (above median)	-.44 (5)	.14 (18)
Low (below median)	.23[a] (14)	-.41 (12)

Note: Number of subjects under each condition is given in parentheses.

[a] $t = 1.66$, $df = 47$, $p<.10$ (ns) when the mean is compared with the mean of the other three cells combined.

Table 8

Mean Academic Effectiveness for Females at Two Levels of Feelings of Aggression and Guilt Over Aggression

	Guilt over aggression	
Feelings of aggression	High (above median)	Low (below median)
High (above median)	-.41 (7)	-.12 (14)
Low (below median)	.34[a] (12)	-.04 (16)

Note: Number of subjects under each condition given in parentheses.

[a] $t = 1.33$, $df = 46$, $p<.10$ (ns) when the mean is compared with the mean is compared with the mean of the other three cells combined.

In previous research on this general issue, Shaw & Grubb (1958) found that underachieving high school males scored higher on each of three hostility scales than did normal achievers. This finding may appear to contradict the findings reported here. However, these studies if viewed in conjunction may actually clarify further the effect of social role on the relationship between personality factors and achievement-oriented behavior. Overt aggression, a characteristic of the masculine social role at all age levels, may often be manifested in competitiveness in role relevant areas. These areas, however, may not be the same in high school and college. In high school, academic success and academically-oriented behavior may be seen as detrimental rather than beneficial to masculinity. High aggressive needs during these years may be manifiested in areas more positively defining the male role (for example, athletics, social leadership, etc.). Males who enter college may be more apt to see vocational success as being of major importance in filling a dominant social role and to perceive high academic performance as necessary to attain such success.

This interpretation may be generalized to include data obtained from females. When direct expression of hostility and aggression are acceptable aspects of one's social role, this expression is manifested in areas that are relevant to this role. However, when overt expression of aggression is inconsistent with one's social role, this expression is inhibited in role-relevant areas and displaced into areas that do not contradict primary role expectations.

CHAPTER III

PHASE II: MOTIVATIONAL AND BACKGROUND CORRELATES OF ACADEMIC EFFECTIVENESS AMONG COLLEGE FRESHMEN

1. Introduction

Portions of the data obtained during the first phase of the study, while suggestive, were difficult to interpret since it was impossible to determine whether desires and expectancies associated with academic and social goal attainment were antecedents or consequents of performance. To minimize this ambiguity in the second phase of the study, information was obtained from freshman students before they formally entered college. While students' desires and expectancies for their performance in college are undoubtedly influenced by their past academic performance in high school, results were at least expected to indicate whether acknowledged motives and attitudes, developed prior to exposure to the college environment, were related to subsequent performance in this environment.

Since the relationships between 16-PF characteristics and academic variables, obtained during the first phase of the study, were expected to be relatively stable over the first year of college, and because the time available for obtaining data from students was limited, only the modified Goal Preference Inventory (Appendix A) was readministered. In addition, a general questionnaire was administered dealing with attitudes and expectancies pertaining to college, attitudes toward parents, and the quality and quantity of discipline received from these parents. Measures of test anxiety and self-acceptance were also obtained.

A further aim of this phase of the investigation was to identify possible background factors contributing to academic effectiveness. Information was therefore obtained from both students and their parents pertaining to the quality of parent-child relationships, and the attitudes of parents toward college and their child's academic performance.

Predictions during this phase of the study were centered around two general hypotheses. The first, formed on the basis of implications of results obtained during Phase I, was that males and females would seek and attain a high level of academic performance to the extent they were motivated to attain primary social role-relevant goals, and had reason to believe that academic success was associated with these goals. Second, it seemed reasonable to expect that academic performance is affected by the degree to which characteristics that facilitate concentrated goal-directed activity have been developed and are maintained in a novel environment. Students who have developed stable internal standards for evaluating their behavior, or who are able to rely upon stable external referents outside the college environment, may experience less conflict in deciding what behavior is appropriate in college, and may therefore be more likely to concentrate upon the pursuit of academic goals.

The reasoning underlying these two general hypotheses, and its implications for the relationship of specific motivational, personality and background factors to academic achievement, are presented in more detail in subsequent sections of this chapter.

2. Method

Collection of Data

Entering freshmen, 525 males and 619 females enrolled in various colleges at the University of Colorado, were administered two questionnaires during freshmen orientation the week prior to registering for college. One of these questionnaires was a modified version of the Liverant Goal Preference Inventory used during Phase I (Appendix A). The second was a general questionnaire dealing with attitudes and expectancies concerning coursework and the college environment, the value of college for attaining vocational and social goals, the importance of going to college, similarity to parents in opinions and goals, the quality of relations with parents, and impressions of the discipline given by parents. This questionnaire is presented in Appendix D.

Within the first month of college, a second questionnaire was sent to all students to assess manifest test anxiety, expectancies and desires concerning grades in college, self-evaluations along a set 24 of personality dimensions, and self-acceptance along these dimensions. These measures are shown in Appendixes E and F. Responses were received from 393 males and 496 females.

Mothers and fathers of all students were also sent questionnaires during the first month of college to determine their attitudes toward college and the value of college education, their similarity to their child, the quality of their relations with him, the extent to which they set up themselves or others as models, and selected child-rearing characteristics. Each parent's evaluation of his child along the same set of personality dimensions administered to students, and his acceptance of the child along these dimensions, were also obtained. Parent questionnaires are shown in Appendix G. Responses were received from 350 fathers and 383 mothers of male students, and 399 fathers and 444 mothers of female students.

Scoring Procedures

General questionnaire items. Response alternatives to the majority of multiple-choice items on parent and student questionnaires could be placed on ordinal scales ranging from 1 (low) to 4 or 5 (high). Responses to these items were assigned numbers according to the position of the response alternative selected on such a scale. (Responses to certain items -- e.g., numbers 2, 23, and 29 on the parent questionnaire -- could not be scored in this way, since the alternatives given were not arranged along such a scale).

Child-rearing attitudes. The child-rearing items contained in part 2 of the parent questionnaire were those taken from the Parental Attitude Research Inventory (Schaefer & Bell, 1955) that were found by Shaw (1960) to discriminate parents of high and low achievers in high school. The items administered to mothers were members of four PARI subscales as defined by Schaefer and Bell, and two more general factors defined by Zuckerman & Ribback (1959). The scales and factors, and the numbers of the items in Appendix G included in each, are as follows:

1. fostering dependency: items 39, 43, 50
2. feelings of martyrdom: items 48, 52, 56
3. ascendancy: items 41, 46, 59
4. overpossessiveness: items 39, 43, 47, 48, 50, 52, 55, 56
5. authoritarian control: items 39, 42, 43, 47-56, 60
6. hostility-rejection: items 44, 61, 62

The items administered to fathers were among those comprising three PARI subscales as defined by Shaefer and Bell (1957):

1. harsh punitive control: items 39, 43, 44, 51, 54
2. suppression of emotion: items 40, 41, 46, 57
3. interpersonal distance: items 40, 47, 57

Test anxiety. Students were administered a shortened form of the Sarasen-Mandler Test Anxiety Questionnaire (1951) shown in Appendix E. Items 1-15 and 18 were used to assess test anxiety; the other 5 items were included as they were felt to be relevant to certain of the issues under investigation. After reverse scoring items 11 and 18, responses to test anxiety items were summed to provide a measure of this variable.

Evaluation and acceptance. Students were asked to evaluate themselves along each of the 24 dimensions shown in Appendix F, and then, for each rating, to record how well they liked themselves in this respect. The latter responses were summed over dimensions to provide an estimate of each student's self-acceptance along these dimensions. Estimates of the degree to which each student was accepted by his mother and father were calculated in an identical manner. A measure of the degree to which parents differed in the criteria used to evaluate their child was determined by calculating the absolute difference between the mother's and father's evaluation of their child for each of the 24 dimensions, and then summing this difference over dimensions.

Selection of Sample

Aptitude (APT) was defined by composite SAT scores and performance (PER) by first semester freshman grade point average.

The mean and standard deviation of aptitude scores were; for males, 1084 and 144, respectively and, for females, 1026 and 148, respectively. The mean and standard deviation of grade point averages were, for males, 2.09 and .81, respectively, and, for females, 2.26 and .69. (Grades were given on a 4-point basis; A=4, B=3, etc.) Apt and Per for each student were converted to z-scores. To insure a sufficient number of students at each of nine combinations of Apt and Per, these z-scores were computed using means calculated for each sex separately. This procedure led to a possible confounding of independent variables; i.e., sex differences detected could possibly be attributed to differences in Apt or Per. The converse would not be true, however. Since performance was the variable of primary concern in this study, this procedure was deemed justified. (In fact, as will be seen, significant sex differences were generally in directions opposite to those that would occur as the result of a confounding of sex with Per.)

The criteria used for selecting subjects are summarized in Table 9. (D refers to the difference in z-scores between Per and Apt.) 20 males and 20 females were selected at each combination of Apt and Per. The mean Apt, Per and difference scores (D) of males and females in each cell are shown in Table 10. Although primary consideration was given to students whose parents had returned questionnaires, a full sample of parents could not be obtained. Table II shows the number of students in the sample for whom responses were received from mothers, from fathers, and from both parents together.

Analyses of each dependent variable as a function of Apt, Per and sex were performed using an unweighted means approximation technique for unequal cell frequencies (Winer, 1962). Supplementary analyses were performed where appropriate.

3. The Effects of Motivation and Social Role-Related Attitudes on Academic Effectiveness

Relationships involving performance and indexes of motivation and expectancies were expected to support the general hypothesis that desires and expectancies associated with academic goals (e.g., academic recognition) would increase with performance among males but not among females, while indexes of social motivation would increase with performance among females but decrease with performance among males.

Students' and parents' responses to certain general questionnaire items were also expected to provide support for this hypothesis. The association of academic performance with the typical female social role of housewife or mother should increase with the mother's education level, how well she enjoyed school when she was a student, the importance she attaches to attending and performing well in college, etc.. Female students, who were assumed to aspire to such a role, were therefore expected to increase in academic performance to the extent that their mothers acknowledged positive attitudes toward education.

Males were expected to perform better academically to the extent they believed good performance to be relevant to fulfillment of their ultimate social role of breadwinner. One index of this was the extent to which they believed college to be important for attaining a well-paying job. Moreover, if the values of males derive from those of their fathers, then the education level of the father, and the father's emphasis upon the importance of college for attaining a well-paying job should each be related positively to their performance. Social interests, however, were expected to interfere with academic effectiveness among males.

Table 9

Criteria for Selecting Students at Each Combination of Aptitude (Apt) and Performance (Per)

(Criteria are given in units of standard deviation from the mean)

	low Apt	normal Apt	high Apt
high Per	$Per > .50$ $Apt < -.50$ $D > 1.50$	$Per > .50$ $-.50 < Apt < .50$ $.70 < D < 1.30$	$Per > .50$ $Apt > .50$ $-.30 < D < .30$
normal Per	$-.50 < Per < .50$ $Apt < -.50$ $.70 < D < 1.30$	$-.50 < Per < .50$ $-.50 < Apt < .50$ $-.30 < D < .30$	$-.50 < Per < .50$ $Apt > .50$ $-1.30 < D < -.70$
low Per	$Per < -.50$ $Apt < -.50$ $-.30 < D < .30$	$Per < -.50$ $-.50 < Apt < .50$ $-1.30 < D < -.70$	$Per < -.50$ $Apt > .50$ $D < -1.50$

Table 10

Mean Aptitude (Apt), Performance (Per) and Difference Between Apt and Per (D) of Males and Females at Each Combination of Independent Variables

(Numbers in parentheses refer to scores converted to units of standard deviation computed for each sex separately)

	Males				Females			
1. Performance	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M
high Per	2.89 (.99)	2.90 (1.00)	2.93 (1.03)	2.91 (1.01)	2.94 (.99)	2.98 (1.04)	2.95 (1.00)	2.96 (1.01)
normal Per	2.13 (.05)	2.13 (.05)	2.13 (.05)	2.13 (.05)	2.26 (.00)	2.24 (-.03)	2.23 (-.04)	2.24 (-.03)
low Per	1.23 (-1.06)	1.20 (-1.10)	1.20 (-1.10)	1.21 (-1.09)	1.52 (-1.07)	1.58 (-.99)	1.50 (-1.00)	1.53 (1.06)
M	2.08 (-.01)	2.08 (-.01)	2.09 (.00)	2.08 (-.01)	2.24 (-.03)	2.27 (.01)	2.23 (-.04)	2.25 (-.01)
2. Aptitude								
high Per	924 (-1.10)	1075 (-.06)	1226 (.99)	1074 (-.07)	880 (-.99)	1035 (.06)	1180 (1.05)	1032 (.04)
normal Per	947 (-.95)	1078 (-.02)	1241 (1.09)	1089 (.03)	877 (-1.01)	1015 (-.07)	1180 (1.05)	1024 (-.01)
low Per	939 (-.06)	1084 (.00)	1267 (1.27)	1097 (.09)	861 (-1.11)	1033 (.05)	1175 (1.01)	1023 (-.02)
M	937 (-1.02)	1079 (-.03)	1244 (1.11)	1087 (.02)	873 (-1.03)	1028 (.01)	1178 (1.03)	1026 (.00)
3. Difference								
high Per	2.09	1.06	.04	1.06	1.98	.98	-.05	.97
normal Per	1.00	.07	-1.04	.01	1.01	.04	-1.09	-.01
low Per	-.06	-1.10	-2.36	-1.17	.04	-1.04	-2.11	-1.04
M	1.01	.01	-1.12	- .02	1.01	0.01	-1.08	-.02

Table 11

Number of Parents in the Sample who Returned Questionnaires at Each Combination of Aptitude (Apt), Performance (Per) and Sex

	Males				Females			
1. Returns by Fathers								
	low Apt	normal Apt	high Apt	Total	low Apt	normal Apt	high Apt	Total
high Per	18	19	17	54	15	18	20	53
normal Per	18	19	14	51	18	19	18	55
low Per	17	17	15	49	16	16	9	41
Total	18	55	46	154	49	53	47	149
2. Returns by Mothers								
high Per	18	18	19	55	17	18	18	53
normal Per	19	19	19	57	19	19	17	55
low Per	19	19	17	55	17	17	14	48
Total	56	56	55	167	53	54	49	156
3. Number of returns by both parents								
high Per	16	16	14	46	14	15	17	46
normal Per	18	19	14	51	19	16	16	51
low Per	16	16	14	46	13	13	9	35
Total	50	51	42	143	46	44	42	132

Several other relationships between performance and motivational and background factors were expected to bear upon the general formulation outlined above. For instance, if females are used by males as models in the home, this should decrease the likelihood that males will adopt achievement-oriented behavior and therefore will produce a decrement in their academic effectiveness. Performance among males should therefore decrease with the number of sisters, the degree to which mothers have been set up as examples for them to follow, and the perceived similarity to their mother in opinions and beliefs. Similar relationships among female students were not expected.

A. Desires and Expectancies Associated with Academic and Social Goal Attainment

Measures of desires and expectancies associated with academic and social goal attainment were taken primarily from the Goal Preference Inventory (Appendix B). Other indexes of desires and expectancies to seek and to attain academic and social goals were taken from the general questionnaire administered to students (Appendix D). Indexes of desire to seek and to receive academic goals are shown in Table 12 as a function of aptitude (Apt), performance (Per) and sex. Indexes of the expectancy to seek and to attain these goals are shown in Table 13. Tables 14 and 15, respectively, show desires and expectancies associated with social goals. Results are summarized and discussed below. (Results cited are significant at $p<.05$ unless otherwise noted.)

Sex

1. Females acknowledged greater desire to seek academic recognition than did males ($p<.10$).
2. The GPA that males felt they could attain with an all-out effort was greater than the GPA that females felt they could attain.
3. The maximum GPA expected by males exceeded that expected by females.
4. The minimum GPA expected by males exceeded that expected by females.
5. Males expected their grades to be higher relative to high school than did females.
6. Females acknowledged greater desire to seek social recognition than did males.
7. Females acknowledged greater expectancy to seek social recognition than did males.
8. Females expected to date more frequently than did males.

Discussion. Sex differences in motivation , as measured in this study, lay in the degree to which goals in academic and social areas were pursued actively (e.g., desire to seek academic and social recognition); no differences were apparent in the intrinsic attractiveness of these goals, as indicated by desire to attain them.

Males believed themselves to be more capable of performing well academically than did females, and also had relatively higher expectancies for their academic achievement. Whether these differences are due to actual differences in self-attitudes, or whether they merely reflect

Table 12

Desires to Seek and to Receive Academic Goals as a Function of Aptitude (Apt), Performance (Per) and Sex

1. Desire to seek academic recognition	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
high Per	53.2	51.8	51.2	52.1	55.0	54.3	52.7	53.9	Sex(S)	3.51
									Apt(A)	.80
normal Per	53.0	53.1	51.5	52.5	54.4	53.7	53.6	53.9	Per(P)	1.18
									S x A	.42
low Per	52.6	51.9	50.6	51.7	51.3	52.2	53.5	52.3	S x P	.31
									A x P	.30
M	52.9	52.3	51.1	52.1	53.5	53.4	53.2	53.4	SxAxP	.40

MSe = 2.12

2. Desire to receive academic recognition	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
high Per	56.4	53.0	54.8	54.7	57.4	56.1	54.1	55.8	Sex(S)	.72
									Apt(A)	1.79
normal Per	52.3	55.8	52.1	53.4	54.6	55.7	52.8	54.4	Per(P)	1.94
									S x A	.73
low Per	54.3	53.8	54.4	54.2	54.4	54.0	52.9	53.8	S x P	.53
									A x P	1.67
M	54.3	54.2	53.8	54.1	55.5	54.3	55.8	54.7	SxAxP	.47

MSe = 1.89

Table 12 (cont.)

	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
4. GPA student feels he should be working towards									
high Per	3.44	3.62	3.57	3.54	3.42	3.33	3.66	3.47	Sex(S) .26 Apt(A) 4.87**
normal Per	3.28	3.33	3.58	3.40	3.27	3.37	3.50	3.38	Per(P) 3.44* S x A .74
low Per	3.54	3.17	3.35	3.35	3.30	3.30	3.49	3.36	S x P .24 A x P 1.17
M	3.42	3.34	3.50	3.43	3.33	3.33	3.55	3.41	SxAxP 1.67
									MSe = .0109
5. GPA student is actually working toward									
high Per	3.07	3.36	3.33	3.25	3.06	3.13	3.26	3.15	Sex(S) .75 Apt(A) 1.24
normal Per	3.11	3.03	3.11	3.08	3.10	3.05	3.04	3.06	Per(P) 9.19** S x A .41
low Per	3.17	2.78	2.91	2.95	2.92	2.86	3.09	2.95	S x P .45 A x P 2.41*
M	3.12	3.06	3.12	3.10	3.03	3.01	3.13	3.06	SxAxP 1.39
									MSe = .0100

* $p < .05$
** $p < .01$

Table 13

Expectancy to Seek and To Receive Academic Goals as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high	M	
1. Expectancy to seek academic recognition									
high Per	49.5	49.2	48.7	49.1	51.9	50.1	47.6	49.9	Sex(S) .08 Apt(A) 1.65
normal Per	49.8	48.8	48.4	49.0	49.1	48.1	48.2	48.5	Per(P) 2.83 S x A .08
low Per	48.5	48.3	47.7	48.1	47.4	47.2	47.8	47.4	S x P .61 A x P .53
M	49.2	48.8	48.2	48.8	49.4	48.5	47.9	48.6	SxAxP .59 MSe = 1.53
2. Expectancy to receive academic recognition									
high Per	40.3	41.4	39.9	40.5	42.0	41.2	40.4	41.2	Sex(S) .11 Apt(A) 1.36
normal Per	41.9	38.7	38.7	39.8	40.0	39.4	40.6	39.9	Per(P) 1.56 S x A .77
low Per	41.9	39.1	40.5	40.5	38.8	39.0	39.6	39.1	S x P 1.27 A x P .63
M	41.4	39.7	39.7	40.3	40.2	39.8	40.2	40.1	SxAxP .89 MSe = 1.36
3. Maximum Expected GPA									
high Per	3.10	3.11	3.07	3.09	2.94	2.89	3.17	3.00	Sex(S) 3.84 Apt(A) 3.44
normal Per	3.07	3.00	2.99	3.02	2.79	2.82	2.97	2.86	Per(P) 6.01 S x A 3.04
low Per	2.87	2.78	2.95	2.86	2.68	2.86	3.03	2.86	S x P 1.00 A X P .42
M	3.01	2.96	3.00	2.99	2.80	2.86	3.06	2.91	SxAxP .48 MSe = .0086

Table 13(cont)

	Males				Females				F-ratios
4, Minimum expected GPA									
high Per	2.41	2.37	2.35	2.38	2.11	2.09	2.30	2.17	Sex(S) 5.80 Apt(A) 5.83
normal Per	2.09	2.10	2.32	2.17	2.06	2.06	2.05	2.06	Per(P)11.87 S x A .06
low Per	1.89	1.94	2.19	2.00	1.83	1.91	2.23	1.99	S x P 1.44 A x P 1.24
M	2.13	2.13	2.29	2.18	2.00	2.02	2.19	2.07	SxAxP .99 MSe = .0097
5. Expected grades relative to high school									
high Per	2.84	2.89	3.11	2.95	2.65	2.80	2.50	2.65	Sex(S) 6.41 Apt(A) 1.14
normal Per	3.05	3.26	3.26	3.19	3.00	3.00	2.95	2.98	Per(P) 4.36 S x A .45
low Per	3.05	3.05	3.37	3.16	2.85	3.85	3.25	2.98	S x P .16 A x P .76
M	2.98	3.07	3.25	3.10	2.83	2.88	2.90	2.87	SxAxP .43 MSe = .0363
6. Amount of time expected to spend studying									
high Per	3.80	3.74	3.84	3.77	3.80	3.45	3.70	3.65	Sex(S) 1.43 Apt(A) 7.38
normal Per	4.00	3.58	3.68	3.75	3.75	3.25	3.60	3.53	Per(P) 1.00 S x A 1.34
low Per	3.74	3.58	3.32	3.54	3.90	3.50	3.55	3.65	S x P 2.15 A x P 1.55
M	3.82	3.63	3.61	3.69	3.82	3.40	3.62	3.61	SxAxP .27 MSe = .0196

* p < .05
** p < .01

Table 14

Desires to Seek and to Receive Social Goals as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
1. Desire to seek social recognition									
high Per	46.5	40.9	41.2	42.8	46.2	47.0	45.2	46.1	Sex(S)11.33 Apt(A) 7.56
normal Per	44.2	42.2	40.4	42.3	44.7	45.9	41.0	43.9	Per(P) 1.75 S x A 1.34
low Per	43.8	41.7	39.4	41.7	46.4	43.5	43.3	44.4	S x P .41 A x P .45
M	44.8	41.6	40.3	42.3	45.7	45.4	43.1	44.7	SxAxP 2.15 MSe = 2.49
2. Desire to receive social recognition									
high Per	52.4	48.2	50.3	50.2	50.2	50.1	47.3	49.1	Sex(S) 1.84 Apt(A) 1.29
normal Per	46.5	49.5	47.5	47.8	46.9	49.8	45.9	47.5	Per(P) 2.33 S x A .96
low Per	51.3	49.5	49.2	50.0	48.5	48.5	47.5	48.2	S x P .31 A x P 1.28
M	50.1	49.1	49.0	49.4	48.5	49.5	46.9	48.3	SxAxP .33 MSe = 2.80
3. Desire to seek social love and affection									
high Per	41.8	39.4	40.2	40.4	39.2	41.2	41.5	40.6	Sex(S) .34 Apt(A) 2.15
normal Per	39.7	39.1	40.1	39.6	42.1	40.6	37.6	40.1	Per(P) .47 S x A .38
low Per	42.2	38.0	38.2	39.4	41.6	38.4	40.2	40.0	S x P .03 A x P .99
M	41.2	38.8	39.4	39.7	40.9	40.0	39.7	40.2	SxAxP 1.33 MSe = 2.30

Table 14(cont)

4.Desire to receive love and affection	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	52.2	46.3	50.2	49.5	50.0	49.1	49.8	49.6	Sex(S) .58 Apt(A) .32
normal Per	43.5	47.5	49.0	46.7	50.6	52.0	46.3	49.6	Per(P) 1.24 S x A 2.47
low Per	49.0	48.5	48.6	48.7	49.4	47.9	45.8	44.3	S x P 1.96 A x P 1.68
M	48.2	47.4	49.3	48.3	49.9	49.6	47.3	48.9	SxAxP 1.45 MSe = 3.20
5.GPA student would like to have if anything was possible									
high Per	3.78	3.84	3.81	3.81	3.78	3.80	3.84	3.80	Sex(S) .63 Apt(A) 2.35
normal Per	3.72	3.73	3.85	3.76	3.68	3.68	3.79	3.71	Per(P) 1.03 S x A .37
low Per	3.82	3.61	3.90	3.78	3.66	3.76	3.79	3.70	S x P .10 A x P .52
M	3.77	3.73	3.85	3.78	3.71	3.75	3.81	3.75	SxAxP .78 MSe = .0070
6.Minimum GPA considered acceptable									
high Per	2.29	2.36	2.39	2.35	2.20	2.23	2.39	2.27	Sex(S) .00 Apt(A) 3.12
normal Per	2.23	2.25	2.43	2.30	2.24	2.20	2.29	2.24	Per(P) 6.17 S x A .03
low Per	2.02	2.08	2.12	2.07	2.15	2.26	2.23	2.21	S x P 2.85 A x P .33
M	2.18	2.23	2.32	2.24	2.20	2.23	2.31	2.24	SxAxP .37 MSe = .0076

Table 14(cont)

7.GPA student feels attainable with all-out effort	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	3.41	3.59	3.73	3.57	3.39	3.42	3.75	3.52	Sex(S) 5.25* Apt(A)13.92*
normal Per	3.51	3.54	3.58	3.54	3.31	3.36	3.53	3.40	Per(P) 1.17 S x A 1.19
low Per	3.57	3.34	3.75	3.55	3.22	3.53	3.63	3.46	S x P .41 A x P .75
M	3.49	3.49	3.68	3.56	3.31	3.44	3.63	3.46	SxAxP 2.28 MSe = ,0080
8.Attempt to do well in everything undertaken									
high Per	4.53	4.83	4.33	4.56	4.61	4.44	4.63	4.56	Sex(S) 1.07 Apt(A) .52
normal Per	4.26	4.37	4.53	4.39	4.78	4.40	4.20	4.46	Per(P) 7.50* S x A .47
low Per	4.15	3.86	4.07	4.03	4.16	4.47	4.07	4.23	S x P .40 A x P .16
M	4.31	4.35	4.31	4.32	4.52	4.44	4.30	4.42	SxAxP 2.55* MSe = ,0386

* $p < .05$
** $p < .01$

Table 15

Expectancy to Seek and to Receive Social Goals as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios
1.Expectancy to seek social recognition	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	39.8	37.4	37.0	38.0	41.4	40.8	41.0	41.1	Sex(S) 12.34 Apt(A) 2.69
normal Per	38.7	36.6	35.6	36.9	40.0	39.9	39.4	39.7	Per(P) 1.41 S x A .78
low Per	38.9	38.3	36.2	37.8	40.0	38.6	38.4	39.0	S x P .73 A x P .06
M	39.1	37.4	36.3	37.6	40.4	39.8	39.6	40.0	SxAxP .15 MSe = 1.98
2.Expectancy to receive social recognition									
high Per	39.5	36.7	34.8	37.0	39.2	38.8	37.7	38.5	Sex(S) .13 Apt(A) 5.34*
normal Per	39.2	38.8	35.6	37.8	36.6	38.8	38.0	37.8	Per(P) .36 S x A 1.23
low Per	40.5	38.0	37.8	38.8	39.6	38.7	38.6	38.0	S x P 1.08 A x P .67
M	39.7	37.8	36.1	37.9	38.5	38.7	37.1	38.1	SxAxP .80 MSe = 1.88
3.Expectancy to seek social love and affection									
high Per	42.3	40.6	41.1	41.3	38.8	42.8	42.1	41.2	Sex(S) .00 Apt(A) .13
normal Per	41.3	39.3	41.9	40.8	41.2	42.1	40.7	41.3	Per(P) .94 S x A .94
high Per	40.6	41.3	39.4	40.4	40.6	38.2	41.4	40.1	S x P .15 A x P .34
M	41.4	40.4	40.8	40.9	40.2	41.0	41.4	40.9	SxAxP 2.29 MSe = 1.83

Table 15(cont)

	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
4. Expectancy to receive social love and affection									
high Per	42.3	38.7	38.2	39.7	40.8	40.8	42.0	41.2	Sex(S) 1.33 Apt(A) .58
normal Per	40.8	39.0	39.1	39.6	39.6	42.1	40.6	40.7	Per(P) .11 S x A 3.57*
low Per	41.1	40.1	41.1	40.8	39.9	40.6	39.8	40.1	S x P 1.61 A x P .57
M	41.4	39.2	39.4	40.0	40.1	41.1	40.7	40.6	SxAxP .88 MSe = 1.25
5. Expected frequency of dating									
high Per	2.56	3.37	2.26	2.40	2.90	2.84	2.89	2.88	Sex(S)27.54* Apt(A) .59
normal Per	2.26	2.53	2.47	2.42	2.85	2.78	2.65	2.76	Per(P) .35 S x A .10
high Per	2.68	2.32	2.53	2.51	2.85	2.85	2.75	2.82	S x P .57 A x P .49
M	2.50	2.40	2.42	2.44	2.87	2.82	2.76	2.82	SxAxP 1.11 MSe =.0232
6. Expectancy to participate in campus activities									
high Per	2.74	2.95	2.89	2.86	2.84	3.00	3.10	2.98	Sex(S) 3.41 Apt(A) 1.42
normal Per	2.74	2.79	2.89	2.81	2.90	2.90	2.85	2.88	Per(P) 1.34 S x A .01
low Per	2.74	2.79	2.74	2.75	2.80	2.95	2.85	2.87	S x P .06 A x P .46
M	2.74	2.84	2.84	2.81	2.85	2.95	2.93	2.91	SxAxP .35 MSe = .0141

* $p < .05$
** $p < .01$

differences in the tendencies of males and females to present themselves as "incompetent", is unclear. Other evidence (Weiss, 1961) indicates that females attempt to appear inferior in achievement-related activity, particularly in the presence of males. In fact, females achieved higher grades ($\bar{x}$=2.26) than did males ($\bar{x}$=2.09), despite their consistently lower initial expectancies.

While males exceeded females in the level of performance they expected to attain, they did not differ from females in their expectancy to receive academic recognition. These results in combination suggest either that females see academic recognition as attainable through a lower level of performance than do males or, alternatively, that females believe that grades are less necessary for attaining academic recognition.

Aptitude

1. High-Apt students felt they should be working toward a higher GPA than did normal-Apt or low-Apt students.
2. The minimum GPA that students considered acceptable increased with Apt.
3. High-Apt students felt they could attain a higher GPA with all-out effort than did normal-Apt or low-Apt students.
4. The maximum GPA expected by high-Apt females exceeded the maximum GPA expected by normal-Apt and low-Apt females; among males, however the maximum expected GPA was high at all levels of Apt.
5. The minimum GPA expected by high-Apt students exceeded the minimum GPA expected by either normal-Apt or low-Apt students.
6. Low-Apt students expected to spend more time studying than did normal-Apt or high-Apt students.
7. The desire to seek social recognition was related negatively to Apt among both males and females.
8. The expectancy to seek social recognition was related negatively to Apt ($p<.10$).
9. The expectancy to receive social recognition was related negatively to Apt. While the Apt x sex interaction did not reach significance, simple effects analyses indicated that this relationship was far more pronounced among males ($F=5.38$, $p<.01$) than among females ($F=1.26$, n.s.).
10. The expectancy to receive social love and affection was unrelated to Apt among females but was related negatively to Apt among males.

Discussion. While both standards for acceptable performance and expectancies for this performance increased with Apt, the actual academic goals sought by students did not. This finding is important since it suggests that aptitude, while affecting perceptions of one's abilities in academic areas, does not in itself motivate students to seek high goals in these areas. The "truism" that persons like to do what they are able to do well is therefore not supported by these data. Students' academic aptitude apparently affects both the development of their expectancies for their academic performance and the standards by which they evaluate this performance. Whether these effects derive from a previous history of consistent reinforcement for engaging in achievement-related activity among high-Apt students, or merely from students' knowledge of their Scholastic Aptitude Test scores, is unclear. The lack of relationship between Apt and the expectancy to receive academic recognition could be a result of different standards of acceptability; for example, a low-Apt student may interpret congratulations for receiving a B in a course as high academic recognition while a high-Apt student may not.

The only exception to the trend of the relationships described above occurred in analyses of the maximum GPA expected; this variable was related positively to Apt among females but was high at all levels of Apt among males. Males' maximum expectancies could be influenced not only by their actual abilities but also by a desire to appear competent in achievement-related activity. Among females, who do not necessarily wish to appear competent, previous indications of their actual ability may be the only major contributing factor.

Data obtained from advanced college students showed that the desire to seek social recognition increased with Apt among males but decreased with Apt among females (Table 2). Among entering freshmen this variable was related negatively to Apt among both males and females. If this difference is attributable to changes in the motives of males once they become exposed to the college environment, it indicates that males with high intellectual ability have little interest in actively seeking social goals upon entering college but increase their interest markedly after exposure to this environment; however, low-Apt males decrease their desire to seek social recognition during this period. Possibly low ability males find the academic demands to be greater than they had expected before they entered college and therefore decrease the magnitude of their social orientation in order to pursue these more primary goals, while high ability males find the academic side of college to be less demanding than they had anticipated and therefore increase their desire to seek social goals.

Expectancies to attain both social recognition and social love and affection were related negatively to Apt among males. Desires to receive these goals, however, were unrelated to Apt among these students. These results suggest that intellectual ability interferes with social goal attainment among males, but not among females, who have similar expectancies to attain social goals at all levels of Apt. These findings are therefore consistent with the hypothesis that academic achievement conflicts with social goal attainment among males but is independent of, if not facilitative of, attainment of social goals among females.

Performance

1. High-Per students believed they should be working toward a higher GPA than did normal-Per or low-Per students.
2. The GPA that students reported working toward was related positively to Per among students of normal or high Apt, but was unrelated to Per among low-Apt students.
3. The minimum GPA considered acceptable by low-Per students was lower than the minimum GPA considered acceptable by normal-Per or high-Per students.
4. The maximum GPA expected was related positively to Per.
5. The minimum GPA expected was related positively to Per.

6. The degree to which students acknowledged trying to do well in everything they undertake was related positively to Per among all students except normal-Apt females.
7. The level of grades expected relative to high school was lower among high-Per students than among normal-Per students.
8. Normal-Per males and females reported less desire to receive social recognition than did high-Per or low-Per students ($p < .10$); observation of these data indicated that this effect occurred among high-Apt and low-Apt students but not among normal-Apt students.

Discussion. Desires and expectancies associated with specific levels of academic performance were generally related positively to the actual performance level attained. Although measures of desires and expectancies were obtained before students received feedback concerning their actual performance in college, a causal interpretation is not entirely justified. Presumably expectancies for performance in college are based in part upon past performance in high school, which is itself related to college performance. This confounding would explain the findings that high performers believed their grades in college to be lower relative to high school than did low performers.

Despite these ambiguities in interpretation, certain results are worth noting. For example, the GPA that students reported working toward was related positively to Per only among students of normal or high aptitude; low performers of low aptitude reported working toward just as high grades as did high performers. The finding by Sears (1940), that persons who have experienced failure often maintain higher aspiration levels than persons who have experienced success, may be relevant here. Possibly low-Apt students, who may have histories of frequent failure in academic areas, have unrealistically high goals that they often fail to attain. Higher aptitude students may often set relatively low goals for themselves; and furthermore they tend to perform in accordance with whatever goals they set.

While the GPA that students reported working toward increased with Per, the GPA they felt they could attain with an all-out effort increased with Apt but was unrelated to Per. Underachievers (e.g., high-Apt, low-Per students) therefore reported working for a substantially lower grade point average than they felt they were able to attain. In other words, underachievers appear aware of the level of performance they are capable of attaining but nevertheless set academic goals that are far below this level.

While desires and expectancies to seek general academic goals, and the amount of time expected to devote to studying, were all unrelated to performance, students who acknowledged trying to do well in everything they undertake achieved relatively high performance. Since this question was included as part of a questionnaire on attitudes toward test situations (Appendix F), "everything" may have been interpreted by students as referring to "everything academic". Nevertheless, data indicate that the desire to seek general academic goals was a less effective predictor than the tendency to acknowledge a striving for success in all forms of goal-directed activity.

The relationships between performance and general desires and expectancies associated with academic recognition, social recognition and social love and affection among entering freshmen did not replicate results based upon data obtained from advanced students (Table 2). This raises questions concerning the adequacy of the interpretation given to these earlier results. For example, the positive relationship between desire to seek academic recognition and Per in the earlier study may not indicate that a desire to seek academic goals leads to increased performance but simply that academic success increases the desire to seek academic goals.

The triple interaction of /pt, Per and sex on the desire to receive social recognition, found in Phase 1, may also need to be reconsidered. These data suggested that underachievement was a result of high social motivation among males but of low social motivation among females. Since the data obtained from incoming freshmen did not replicate these findings, this causal interpretation appears incorrect. An alternative explanation is that underachieving males, more often than low performers of low aptitude, attempt to offset their poor academic performance by increasing their social orientation, while underachieving females, for whom academic recognition may be a means of social goal attainment, rationalize their poor performance by deemphasizing the importance of social goals. If the attainment of academic and social goals are antagonistic to one another among males but not among females, a dissonance model (Festinger, 1957) could be applied to these results. That is, among low performing males, social motivation is consonant with poor performance while their level of academic ability is dissonant. The proportion of dissonance created by poor performance should increase with aptitude and therefore produce greater pressure to increase consonance (i.e., to increase the importance of social goals). Among females, both aptitude and desire for social goals are dissonant with poor performance; among these students, pressure to reduce dissonance resulting from high aptitude should result in a decrease in the importance of social goals.

Supplementary Analysis 1

In view of the above ambiguities it seemed particularly important to obtain additional support for the assumption that social and academic goal attainment are seen as antagonistic by males but are seen as independent if not facilitative by females. If this assumption is correct, sex differences should occur in the effects of high desire to seek goals in both academic and social areas. Specifically, among males with a high desire to seek academic recognition, a high desire to seek social recognition should conflict with these desires and therefore should produce a decrement in academic effectiveness. Among females, however, a similar effect should not occur.

To explore this possibility, males and females were each divided into groups above and below the mean in (a) the desire to seek academic recognition and (b) the desire to seek social recognition. These indexes were felt to reflect most clearly the commitment to concentrated pursuit of academic and social goals. The mean academic performance of males and females described by each combination of these desires was determined. These data are shown in Table 16. Analyses of data were performed on males and females separately. Desire to seek social recognition and desire to seek academic recognition interacted significantly among males ($F=4.30$, $p<.05$, $MSe=.00519$) but not among females ($F = .11$). Males' performance was relatively high only if they acknowledged both a high desire to seek academic recognition and a low desire to seek social recognition. However, females' performance was equally high at both levels of desire to seek social recognition. These data are consistent with the interpretation that males but not females often perceive academic achievement-oriented activity to be antagonistic to social goal attainment, and therefore feel it is necessary to choose between goals in one area and goals in the other.

Supplementary Analysis 2 -- Satisfaction with Academic and Social Goal Attainment

A possible reason for the lack of relationship between performance and desires associated with receipt of general academic and social goals was the failure to take into account the expectancy that these goals would be attained. Desire to receive goals may lead to active pursuit of these goals only if the expectancy to receive them is not extremely high.

This factor is particularly important in considering the behavior of incoming freshmen, since these students' expectancies are not based upon actual experience in the college environment and therefore may be unrealistic. Students whose expectancies to receive academic goals similar to their desires may not believe they have to work as hard to attain these goals and hence do not perform as well, as do students with expectancies much lower than their desires. On the other hand, many students whose expectancies for attaining academic goals are extremely lower than their desires may feel that attempts to attain these goals would be futile, and therefore may not make these attempts. High performers and low performers may both have relatively higher discrepancies between their desire to receive academic goals and their expectancy to receive them than students in the normal performance range.

Analogous reasoning could be applied when predicting performance as a function of the expectancy to be satisfied with receipt of social goals. Students who do not expect to be satisfied may either devote an excessive amount of time to the pursuit of social goals, resulting in a decrement in performance, or may believe that they are unable to attain social goals regardless of the effort expended, and therefore may concentrate on academic goal attainment. Therefore, both high and low performers may express greater discrepancy between expectancy and desire to receive social goals than do normal performers.

Table 16

Mean Grade-Point Average as a Function of Desire to Seek Academic Recognition and Desire to Seek Social Recognition

	Males		Females	
	Desire to seek social recognition		Desire to seek academic recognition	
	Low (below the mean)	High (above the mean)	Low (below the mean)	High (above the mean)
High (above the mean)	2.07(118)	2.10(174)	2.19(134)	2.30(208)
Low (below the mean)	1.96(132)	2.29(98)	2.20(132)	2.33(137)

To explore the above possibilities, each subject's expectancies to receive academic recognition, social recognition and social love and affection were subtracted from his desires to receive each of these goals, respectively. A low difference between desire and expectancy associated with receipt of goals in each area was assumed to indicate a high expectancy to be satisfied with goal attainment in the area. Mean difference scores as a function of Apt, Per and sex are presented in Table 17. The following results attained significance:

1. Females expected to be more satisfied with receipt of social recognition than did males.
2. Normal-Per students expected to be more satisfied with receipt of social recongition than did both high-Per students and, nonsignificantly, low-Per students.
3. The relationship between Per and expectancy to be satisfied with academic recognition was dependent upon Apt. Specifically, among high-Apt and low-Apt students, normal performers had greater expectancy to be satisfied with receipt of academic recognition than either high performers or low performers. Among normal-Apt students, however, normal performers expected to be less satisfied than either high-Per or low-Per students. These relationships were similar among both males and females.
4. The expectancy to be satisfied with receipt of social love and affection was unrelated to performance. However, a significant Apt x sex interaction occurred; among females, the expectancy increased consistently with Apt, while among males the expectancy decreased with Apt.

The relationship of Per to the expectancy to be satisfied with receipt of social and academic recognition therefore was supported with one exception: normal performers of normal aptitude expected to be less satisfied with receipt of academic recognition than both low and high performers in this aptitude range. This was particularly true among males. Normal-Apt students may be in a marginal position in which high academic goals are attainable only at the sacrifice of other interests. Such students may feel pressure to commit themselves either exclusively to academic pursuits or exclusively to nonacademic pursuits. Those students who have resolved this conflict may either perform very well or very poorly, depending upon their means of resolving it. In both cases they may acknowledge little discrepancy between desires and expectancies to receive academic goals, however; high performers because their desires and expectancies are both high, and low performers because they have decided not to seek academic goals and, as a result, have decreased their desire for them (cf. Brehm & Cohen, 1959). Normal aptitude students who have not committed themselves completely to academic pursuits may expect greater dissatisfaction with the receipt of academic goals; moreover, they may direct only a moderate amount of effort toward the pursuit of academic goals, resulting in average performance.

The fact that similar relationships did not occur between performance and the expectancy to be satisfied with receipt of social love and affection is curious, and points up the conceptual distinction between social recognition and social love and affection. Apparently neither the desire nor the expectancy to have effective interpersonal relationships are factors that affect the pursuit of academic goals. These goals may be attainable through informal social relationships that do not necessarily conflict with academic goal attainment, while attainment of social

Table 17

Expectancy to be Satisfied with Receipt of Academic and Social Goals as a Function of Aptitude (Apt), Performance (Per) and Sex

(Note: Low score = high expectancy)

	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
1. Academic recognition									
high Per	16.11	11.63	14.95	14.23	15.35	14.95	13.60	14.63	Sex(S) 1.24 Apt(A) 1.62
normal Per	10.37	17.11	13.42	13.63	14.65	16.35	12.20	14.40	Per(P) .13 S x A 2.18
low Per	12.42	14.74	13.89	13.68	15.65	15.11	13.30	14.69	S x P .07 A x P 3.11*
M	12.96	14.49	14.09	13.85	15.22	15.47	13.03	14.57	SxAxP 1.49 MSe = 1.91
2. Social recognition									
high Per	12.84	11.42	15.42	13.23	10.45	11.35	9.60	10.47	Sex(S) 4.89* Apt(A) 1.42
normal Per	7.47	10.63	12.00	10.04	10.15	11.05	7.90	9.70	Per(P) 3.10* S x A 2.01
low Per	10.84	11.53	11.78	11.38	8.85	9.79	11.85	10.16	S x P 1.19 A x P .53
M	10.39	11.19	13.07	11.56	9.82	10.73	9.78	10.11	SxAxP 1.82 MSe = 1.90
3. Social love and affection									
high Per	9.84	7.63	12.05	9.84	9.15	8.35	7.75	8.42	Sex(S) .00 Apt(A) .01
normal Per	2.68	8.58	9.89	7.05	11.00	9.90	5.70	8.87	Per(P) 1.44 S x A 7.63
high Per	7.79	8.42	7.94	8.05	9.50	7.26	6.00	7.59	S x P 1.93 A x P 1.47
M	6.77	8.21	9.96	8.31	9.88	8.50	6.48	8.29	SxAxP 1.97* MSe = 2.15

* p < .05
** p < .01

recognition may require a substantial time commitment that is seen, at least by males, as interfering with academic pursuits.

The interaction of sex and aptitude in analyses of the discrepancy between desire and expectancy to receive social love and affection was unexpected. High-Apt females had a higher expectancy to be satisfied with receipt of social love and affection than lower aptitude females, while high aptitude males had lower expectancy to be satisfied. This could be due in part to the fact that high-Apt females have lower desire to receive social affiliation goals than other females, while high-Apt males have relatively higher desires in this area; analyses involving the desire to receive social love and affection (Table 9), while not producing significant results, suggest that this is true. These data are also consistent with the interpretation that an intellectual orientation is not detrimental to effective social relationships among females but may be among males. High aptitude females may have more time to spend in dating and other interpersonal relationships. High-Apt males, however, may have acquired social characteristics that prevent successful social relationships and therefore decrease their expectancy to be satisfied with receipt of affiliation goals.

B. Students' Attitudes and Values Associated with Academic Success and Intellectual Activity

Several measures were obtained of students' attitudes toward college, its value for attaining intellectual and social goals, and the amount of intellectual stimulation expected. These variables as a function of Apt, Per and sex are shown in Table 18. Results are summarized and discussed below:

Sex

1. Males attached greater importance to attending college than did females.
2. Females acknowledged attending college relatively more for social broadening than did males.
3. Males believed college to be more important for attaining a well-paying job than did females.
4. Females expected college teachers to be relatively more stimulating than did males.

Aptitude

1. Among females, the importance of college for obtaining a well-paying job decreased with Apt. Males saw college to be relatively important for obtaining a well-paying job at all levels of Apt.

Performance

1. The importance attached to going to college increased with Per.
2. All females except those low in Apt and either normal or low in Per attached little importance for attaining a well-paying job. Males regardless of Apt or Per, believed a well paying job to be important.
3. Low-Per students expected coursework to be less interesting relative to high school than did normal-Per or high-Per students.

Table 18

Students' Attitudes toward College and Intellectual Activity

as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M	
1. Importance of attending college									
high Per	4.89	4.74	4.63	4.75	4.65	4.65	4.50	4.60	Sex(S)14.97 Apt(A) 2.18
normal Per	4.74	4.68	4.68	4.70	4.50	4.60	4.00	4.37	Per(P) 3.49 S x A .69
low Per	4.58	4.58	4.63	4.60	4.45	4.23	4.45	4.38	S x P .77 A x P 1.53
M	4.74	4.67	4.65	4.68	4.53	4.50	4.32	4.45	SxAxP 1.39 MSe = .0165
2. Extent to which student is attending for social (vs. intellectual broadening									
high Per	2.37	2.05	2.26	2.23	2.35	2.60	2.50	2.48	Sex(S)14.61 Apt(A) .89
normal Per	2.32	2.21	2.05	2.19	2.60	2.35	2.45	2.47	Per(P) .09 S x A .48
high Per	2.21	2.21	2.42	2.28	2.35	2.30	2.50	2.38	S x P .97 A x P 1.45
M	2.30	2.16	2.25	2.23	2.43	2.42	2.48	2.44	SxAxP 1.55 MSe = .0137
3. Extent to which college is for attaining a well-paying job									
high Per	2.84	2.50	2.84	2.72	2.40	2.55	2.05	2.33	Sex(S)26.92 Apt(A) 2.17
normal Per	2.58	2.89	2.74	2.74	2.65	2.30	2.20	2.38	Per(P) 1.42 S x A 3.12
low Per	2.84	2.84	2.79	2.82	2.75	2.37	2.40	2.51	S x P .10 A x P .19
M	2.76	2.74	2.79	2.76	2.60	2.41	2.22	2.41	SxAxP 2.64 MSe = .0211

Table 18 (cont.)

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
4. Expectation for teachers to be stimulating										
high Per	3.05	2.95	3.21	3.07	3.30	3.45	3.40	3.38	Sex (S)	12.79**
normal Per	3.00	3.05	3.26	3.11	3.60	3.55	3.37	3.51	Apt (A)	.23
									Per (P)	1.55
low Per	2.95	3.26	3.89	3.04	3.20	3.25	3.20	3.22	SxA	.37
M	3.00	3.09	3.12	3.07	3.37	3.42	3.32	3.37	SxP	.58
									AxP	.45
									SxAxP	.81
5. Expectation for course work to be stimulating									MSe=	.0314
high Per	4.42	4.58	4.53	4.51	4.80	4.70	4.55	4.68	Sex (S)	1.32
normal Per	4.37	4.42	4.79	4.53	4.75	4.45	4.60	4.60	Apt (A)	.40
									Per (P)	5.35**
low Per	4.32	4.47	4.37	4.39	4.23	4.35	4.45	4.35	SxA	1.74
M	4.37	4.49	4.56	4.47	4.60	4.50	4.53	4.54	SxP	.96
									AxP	1.26
									SxAxP	1.01
6. Expectation for course work to be challenging									MSe=	.0170
high Per	3.89	3.95	3.89	3.91	3.95	3.90	3.70	3.85	Sex (S)	.07
normal Per	3.95	3.68	3.89	3.84	4.00	3.90	3.75	3.88	Apt (A)	2.10
									Per (P)	.47
low Per	3.79	3.84	3.89	3.84	3.90	3.75	3.85	3.83	SxA	2.72
M	3.88	3.82	3.89	3.87	3.95	3.85	3.77	3.85	SxP	.66
									AxP	1.62
									SxAxP	1.09
									MSe=	.0061

Table 18 (cont)

5. Expectation for work to be stimulating	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
high Per	4.42	4.58	4.53	4.51	4.80	4.70	4.55	4.68	Sex(S)	1.32
									Apt(A)	.40
normal Per	4.37	4.42	4.79	4.53	4.75	4.45	4.60	4.60	Per(P)	5.35
									S x A	1.74
low Per	4.32	4.47	4.37	4.39	4.25	4.35	4.45	4.35	S x P	.96
									A x P	1.26
M	4.37	4.49	4.56	4.47	4.60	4.50	4.53	4.54	SxAxP	1.01
									MSe =	.0170

6. Expectation for course work to be challenging										
high Per	3.89	3.95	3.89	3.91	3.95	3.90	3.70	3.85	Sex(S)	.07
									Apt(A)	2.10
normal Per	3.95	3.68	3.89	3.84	4.00	3.90	3.75	3.88	Per(P)	.47
									S x A	2.72
low Per	3.79	3.84	3.89	3.84	3.90	3.75	3.85	3.83	S x P	.66
									A x P	1.62
M	3.88	3.82	3.89	3.87	3.95	3.85	3.77	3.85	SxAxP	1.09
									MSe =	.0061

* $p < .05$
** $p < .01$

Discussion. Females appeared to attach generally less importance to college than did males, and to see it as primarily for social rather than intellectual broadening. The assumption that males and females differ in their reasons for going to college is therefore supported. Females of higher aptitude, who might be expected to aspire to career goals, actually reported college to be less important for vocational goal attainment than did lower aptitude females.

The emphasis upon intellectual vs. social broadening in college was unrelated to aptitude. This, together with the finding that desire to receive social goals was unrelated to Apt, suggests that differences in social orientation among high and low aptitude students found during Phase I are not attributable to lack of interest in social activities but instead may result from differences in their acceptance by other persons in this social environment.

Performance among males was expected to increase with the perceived relevance of college to vocational goal attainment, while performance among females was expected to increase with the degree to which they believed college to be for social goal attainment. This hypothesis must be rejected on the basis of these data. However, the importance attached to attending college, assessed independently of the reason for its importance, was positively related to Per among both males and females, particularly those at lower levels of aptitude. Apparently, while persons who attach importance to college are more motivated to perform well than persons who believe it is not important, the relevance of college for attaining any particular type of goal, be it intellectual, vocational or social, is not a contingent factor.

C. Parental Influences

Since parents are primary examples of sex-role appropriate behavior, it was anticipated that males would perform well to the extent that their fathers believed academic goals to be important, while females would perform well to the extent that their mothers attached importance to these goals. Paternal dominance in decision-making and encouragement of the father as a model were expected to increase performance among males while maternal dominance was anticipated to be related positively to performance among females. Similarity to the same sex parent, a possible indication of the adoption of one's sex-defined social role, was also considered.

The relationship of Apt, Per and sex to variables reflecting on parents' attitudes and values toward education and academic performance are shown in Tables 19 and 20. Data in Tables 21, 22, and 23 show relationships of independent variables to (a) indexes of parental dominance in decision-making, (b) the degree to which parents and siblings were available as examples to follow, and (c) the similarity between students and their parents. Indexes of how well students get along with their parents are presented in Table 24. Results are summarized and discussed below:

Table 19

Parents' Attitudes and Values toward College and Education as a Function of Aptitude (Apt), Performance (Per) and Sex

1.Education level	Males				Females				F-ratios
a.of the mother									
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	3.06	4.05	4.32	3.80	3.94	4.00	4.00	3.98	Sex(S) 3.51
									Apt(A) 3.20
normal Per	4.05	4.21	3.68	3.98	3.60	4.32	4.59	4.16	Per(P) .57
									S x A 1.52
low Per	4.16	3.68	3.53	3.79	3.65	4.35	4.64	4.21	S x P .34
									A x P .48
M	3.42	3.98	3.84	3.86	3.73	4.23	4.41	4.12	SxAxP 3.75
									MSe = .0870
b.of the father									
high Per	3.61	4.16	3.94	3.90	5.00	5.06	4.60	4.89	Sex(S)10.49
									Apt(A) 1.87
normal Per	4.17	4.21	4.79	4.39	3.94	4.47	5.39	4.60	Per(P) .71
									S x A .32
low Per	4.18	4.82	4.07	4.36	4.69	5.00	5.22	4.97	S x P 1.41
									A x P 1.47
M	3.98	4.40	4.27	4.21	4.54	4.84	5.07	4.82	SxAxP .73
									MSe = .1560
2.Liking of school when a student									
a.by the mother									
high Per	4.61	4.58	4.78	4.33	5.12	5.18	5.13	5.15	Sex(S) 1.30
									Apt(A) .64
normal Per	5.11	4.63	4.68	4.81	4.80	5.05	4.76	4.88	Per(P) .25
									S x A .78
low Per	5.16	4.74	5.18	5.03	4.88	4.65	5.00	4.85	S x P 3.17
									A x P .78
M	4.96	4.65	4.88	4.83	4.94	4.96	4.97	4.96	SxAxP .30
									MSe = .0553

Table 19 (cont.)

b.by the father	Males				Females				F-ratios
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M	
high Per	4.06	4.47	4.12	4.22	4.87	4.67	4.30	4.61	Sex(S) 1.5 Apt(A) .1
normal Per	4.28	4.53	4.43	4.41	4.41	4.68	4.44	4.51	Per(P) .0 S x A .5
low Per	4.53	4.47	4.47	4.49	4.56	4.13	4.67	4.45	S x P 1.0 A x P 1.0
M	4.29	4.49	4.34	4.37	4.61	4.49	4.47	4.53	SxAxP .4 MSe = .067
3. Importance attached to student's attending college									
a.by the mother									
high Per	4.50	4.47	4.44	4.48	4.18	4.45	4.21	4.28	Sex(S) 5.1 Apt(A) .3
normal Per	4.42	4.16	4.44	4.34	4.30	4.05	4.12	4.16	Per(P) .8 S x A .4
low Per	4.21	4.37	4.59	4.39	4.29	4.12	4.29	4.24	S x P .0 A x P 1.0
M	4.38	4.34	4.50	4.41	4.26	4.24	4.21	4.23	SxAxP .4 MSe = .027
b.by the father									
high Per	4.39	4.11	3.76	4.09	3.93	4.29	4.15	4.13	Sex(S) 5.8 Apt(A) .7
normal Per	4.17	4.28	4.29	4.25	3.94	3.63	3.83	3.80	Per(P) .3 S x A .5
low Per	4.24	3.88	4.33	4.15	3.93	3.63	4.11	3.89	S x P 2.3 A x P 1.7
M	4.27	4.09	4.13	4.16	3.94	3.85	4.03	3.94	SxAxP 1.3 MSe = .037

Table 19 (cont.)

4.Student's estimate of importance to parents that he attend college	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	4.63	4.32	4.58	4.51	4.65	4.50	4.35	4.50	Sex(S) .5 Apt(A) .5
normal Per	4.26	4.32	4.63	4.40	4.60	4.50	4.30	4.47	Per(P) 1.0 S x A 1.1
low Per	4.68	4.47	4.32	4.49	4.10	4.35	4.40	4.28	S x P 1.4 A x P .5
M	4.53	4.37	4.51	4.47	4.45	4.45	4.35	4.42	SxAxP 2.9 MSe = .020
5.Importance of college for a man									
a.mother's opinion									
high Per	3.83	3.79	3.79	3.81	3.69	3.88	3.79	3.79	Sex(S) .2 Apt(A) .1
normal Per	3.84	3.63	3.74	3.74	3.75	3.63	3.81	3.73	Per(P) .5 S x A. .8
low Per	3.74	3.79	3.88	3.81	3.67	3.88	3.71	3.76	S x P .0 A x P 1.1
M	3.81	3.72	3.81	3.79	3.70	3.80	3.78	3.76	SxAxP .3 MSe = .011
b.father's opinion									
high Per	3.72	3.74	3.63	3.70	4.00	3.94	3.60	3.85	Sex(S) .7 Apt(A) 1.5
normal Per	3.83	3.74	3.86	3.81	3.61	3.63	3.50	3.58	Per(P) .6 S x A 1.7
low Per	3.65	3.71	3.73	3.70	3.75	3.80	3.63	3.73	S x P 4.0 A x P .7
M	3.74	3.73	3.74	3.20	3.79	3.79	3.58	3.16	SxAxP .1 MSe = .014

Table 19 (cont.)

6. Importance of college for a woman	Males				Females				F-ratios
a. mother's opinion	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	3.50	3.26	3.16	3.31	3.29	3.39	3.68	3.46	Sex(S) 5.0 Apt(A) .8
normal Per	3.37	3.16	3.37	3.30	3.55	3.16	3.50	3.41	Per(P) .7 S x A 2.5
low Per	3.42	3.32	3.35	3.37	3.29	3.73	3.50	3.51	S x P .0 A x P 1.9
M	3.43	3.25	3.30	3.33	3.38	3.41	3.56	3.46	SxAxP 2.1 MSe = .015
b. father's opinion									
high Per	3.11	3.16	3.06	3.11	3.53	3.50	3.35	3.46	Sex(S)12.3 Apt(A) .0
normal Per	2.94	3.16	3.29	3.13	3.33	3.26	3.06	3.32	Per(P) 1.4 S x A 1.9
low Per	3.12	3.06	3.33	3.17	3.38	3.40	3.44	3.41	S x P 1.4 A x P .7
M	3.06	3.13	3.23	3.14	3.42	3.39	3.29	3.36	SxAxP .5 MSe = .018
7. Importance of college for social (vs. intellectual broadening									
a. mother's opinion									
high Per	2.11	2.05	2.11	2.19	2.29	2.28	2.21	2.26	Sex(S) 9.8 Apt(A) .7
normal Per	2.16	2.00	2.16	2.10	2.15	2.42	2.24	2.27	Per(P) .0 S x A 1.6
low Per	2.11	2.21	2.06	2.12	2.06	2.35	2.36	2.25	S x P .0 A x P .6
M	2.12	2.08	2.11	2.10	2.18	2.35	2.26	2.26	SxAxP 1.1 MSe = .010

Table 19 (cont.)

b.father's opinion	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	2.22	2.00	2.41	2.21	2.33	2.28	2.30	2.30	Sex(S) 3.0 Apt(A) 4.8
normal Per	2.11	2.11	2.50	2.24	2.11	2.47	2.59	2.39	Per(P) .6 S x A 1.4
low Per	2.24	2.37	2.00	2.00	2.25	2.56	2.56	2.27	S x P .1 A x P 1.9
M	2.19	2.16	2.30	2.21	2.14	2.33	2.46	2.32	SxAxP 3.3 MSe = .015
8.Importance of college for a well-paying job									
a.mother's opinion									
high Per	2.88	2.78	2.65	2.77	2.25	2.29	2.24	2.26	Sex(S)34.0 Apt(A) .8
normal Per	2.89	2.47	2.83	2.73	2.24	2.42	2.13	2.26	Per(P) .0 S x A 1.3
low Per	2.63	2.72	2.76	2.71	2.50	2.33	2.00	2.28	S x P .0 A x P .1
M	2.80	2.66	2.75	2.74	2.33	2.35	2.12	2.27	SxAxP 1.4 MSe = .029
b.father's opinion									
high Per	2.59	2.67	2.67	2.64	2.33	2.29	2.42	2.35	Sex(S)12.2 Apt(A) .7
normal Per	2.67	2.17	2.38	2.41	2.31	2.21	2.00	2.18	Per(P) 2.0 S x A .0
low Per	2.75	2.64	2.73	2.71	2.31	2.14	2.33	2.27	S x P .4 A x P .6
M	2.67	2.50	2.60	2.59	2.32	2.22	2.25	2.27	SxAxP .3 MSe = .038

Table 19 (cont.)

9. Importance that student join fraternity	Males				Females				F-ratios
a. mother's opinion	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	2.39	1.84	1.95	2.06	2.71	2.11	2.37	2.40	Sex(S) 5.0 Apt(A) 1.2
normal Per	2.11	1.89	1.94	1.98	2.20	2.11	1.76	2.03	Per(P) 2.2 S x A .3
low Per	1.53	1.79	2.00	1.78	2.18	2.12	2.14	2.15	S x P .8 A x P 1.5
M	2.01	1.84	1.97	1.94	2.36	2.11	2.10	2.19	SxAxP .3 MSe = .055
b. father's opinion									
high Per	2.39	2.11	1.88	2.13	2.33	2.47	2.30	2.37	Sex(S) 10.7 Apt(A) 2.7
normal Per	2.22	1.89	1.64	1.92	2.23	1.89	1.94	2.16	Per(P) 1.1 S x A .6
low Per	1.41	1.94	2.00	1.79	2.73	2.56	2.00	2.44	S x P 1.4 A x P 1.2
M	2.01	1.98	1.85	1.95	2.57	2.31	2.08	2.32	SxAxP 1.9 MSe = .058

* $p < .05$
** $p < .01$

Table 20

Parental Expectancies and Attitudes Concerning Academic Performance as a Function of Aptitude (Apt), Performance(Per) and Sex

1. Disappointment if child were to perform poorly	Males				Females				F-ratios
a. by mother	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	3.67	3.74	3.53	3.64	3.47	3.50	3.42	3.46	Sex(S) 2.43 Apt(A) .17
normal Per	3.63	3.58	3.78	3.63	3.55	3.53	3.53	3.54	Per(P) .55 S x A .03
low Per	3.58	3.53	3.76	3.62	3.65	3.53	3.71	3.63	S x P .88 A x P 1.10
M	3.63	3.61	3.66	3.63	3.56	3.52	3.55	3.54	SxAxP .17 MSe = .0148
b. by father									
high Per	3.50	3.53	3.35	3.46	3.47	3.50	3.65	3.52	Sex(S) 3.02 Apt(A) 1.00
normal Per	3.50	3.47	3.64	3.54	3.44	3.16	3.17	3.26	Per(P) 1.12 S x A .08
low Per	3.65	3.44	3.67	3.59	3.44	3.31	3.56	3.42	S x P 2.45 A x P .53
M	3.55	3.48	3.56	3.53	3.45	3.33	3.46	3.44	SxAxP .98 MSe = .0205
2. Performance level expected									
a. by the mother									
high Per	3.72	3.74	3.79	3.75	3.59	3.61	4.10	3.75	Sex(S) .00 Apt(A)17.95*
normal Per	3.68	3.37	3.84	3.63	3.40	3.63	3.76	3.60	Per(P) 6.12* S x A 1.79
low Per	3.29	3.21	3.94	3.48	3.24	3.41	3.86	3.50	S x P .06 A x P 1.65
M	3.57	3.44	3.86	3.62	3.41	3.55	3.89	3.62	SxAxP 1.44 MSe = .0164

Table 20 (cont.)

b. by the father	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	3.50	3.89	3.71	3.70	3.80	4.00	4.20	4.00	Sex(S) .18 Apt(A)12.43
normal Per	3.61	3.47	4.00	3.70	3.44	3.42	3.88	3.59	Per(P)12.69 S x A .05
low Per	3.24	3.31	3.87	3.47	3.13	3.44	3.56	3.38	S x P 3.80 A x P 1.74
M	3.45	3.56	3.86	3.63	3.46	3.62	3.88	3.66	SxAxP 1.00 MSe = .0217
3. GPA that students felt their parents expected									
high Per	2.95	2.86	3.01	2.94	3.01	2.87	3.13	3.00	Sex(S) .07 Apt(A) 6.44
normal Per	3.03	2.92	3.02	2.98	2.81	2.85	3.02	2.89	Per(P) 4.40 S x A .35
low Per	2.67	2.71	2.97	2.78	2.71	2.86	2.99	2.85	S x P 1.44 A x P .95
M	2.88	2.83	3.00	2.90	2.84	2.86	3.05	2.92	SxAxP .44 MSe = .0090
4. Expectancy for child's performance relative to high school									
a. by the mother									
high Per	3.39	3.26	3.21	3.29	2.94	3.11	3.06	3.03	Sex(S)30.78 Apt(A) .07
normal Per	3.89	3.72	3.68	3.81	3.00	2.89	3.18	3.02	Per(P) 6.48 S x A .07
low Per	3.63	3.58	3.88	3.70	3.42	3.41	3.14	3.34	S x P 3.77 A x P .07
M	3.64	3.56	3.59	3.60	3.14	3.14	3.12	3.13	SxAxP 1.52 MSe = .0315

Table 20 (cont.)

b. by the father	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	3.22	3.42	3.18	3.28	3.27	3.17	3.20	3.21	Sex(S)25.13* Apt(A) .12
normal Per	3.50	3.53	3.79	3.61	3.11	3.00	3.06	3.06	Per(P) 4.21* S x A 2.39
low Per	3.59	3.88	4.07	3.85	3.38	3.38	2.89	3.22	S x P 4.62* A x P .48
M	3.44	3.61	3.68	3.58	3.25	3.18	3.05	3.16	SxAxP 1.27 MSe = .0306
5. Minimum GPA students feel would be acceptable to their parents									
high Per	2.32	2.25	2.21	2.26	2.18	2.14	2.47	2.27	Sex(S) .68 Apt(A) 1.46
normal Per	2.23	2.25	2.38	2.29	2.17	2.16	2.24	2.19	Per(P) 1.35 S x A .16
low Per	2.09	2.21	2.25	2.18	2.16	2.21	2.13	2.16	S x P .48 A x P .43
M	2.21	2.24	2.28	2.24	2.17	2.17	2.28	2.21	SxAxP 1.51 MSe = .0093
6. Extent to which child has failed to meet past expectations									
a. of the mother									
high Per	3.56	3.42	3.32	3.43	3.71	3.39	3.69	3.59	Sex(S)10.58* Apt(A) .65
normal Per	3.16	2.63	3.26	3.02	3.40	3.16	3.29	3.28	Per(P)23.94* S x A .34
low Per	2.67	2.84	2.35	2.62	2.82	3.18	3.00	3.00	S x P .37 A x P 2.69*
M	3.13	2.96	2.98	3.02	3.31	3.24	3.33	3.29	SxAxP 1.16 MSe = .0309

Table 20 (cont.)

b. of the ** father	Males low Apt	Males nor-mal Apt	Males high Apt	Males M	Females low Apt	Females nor-mal Apt	Females high Apt	Females M	F-ratios
high Per	3.50	3.58	3.59	3.56	3.80	3.56	3.80	3.72	Sex(S) 5.68 Apt(A) 1.38
normal Per	3.06	3.00	3.14	3.07	3.17	3.21	3.44	3.28	Per(P)18.54 S x A 1.00
low Per	2.76	2.94	2.73	2.85	2.75	3.13	3.44	3.11	S x P .17 A x P .51
M	3.11	3.18	3.16	3.15	3.24	3.30	3.57	3.39	SxAxP .63 MSe = .0390
7.Students' feeling of inability to live up to parental expectations									
high Per	2.25	1.61	1.94	1.94	1.59	1.83	1.84	1.75	Sex(S) 1.10 Apt(A) .64
normal Per	2.05	2.00	1.53	1.86	1.61	2.15	1.75	1.84	Per(P) 2.85 S x A .54
low Per	2.23	2.50	2.07	2.27	2.42	1.79	2.00	2.07	S x P .19 A x P .79
M	2.18	2.04	1.85	2.02	1.87	1.92	1.86	1.89	SxAxP 1.61 MSe = .0730

* $p < .05$
** $p < .01$

Table 21

Parental Dominance in Decisionmaking as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
1. Father's dominance in decision making on disciplinary matters									
a. mother's opinion									
high Per	2.67	2.94	2.81	2.81	2.19	2.06	2.72	2.32	Sex(S) 3.53 Apt(A) .48
normal Per	2.63	2.44	2.59	2.55	2.70	2.78	2.71	2.73	Per(P) .42 S x A .66
low Per	2.68	2.74	2.53	2.65	2.25	2.62	2.42	2.43	S x P 4.11* A x P .95
M	2.66	2.71	2.64	2.66	2.38	2.49	2.61	2.49	SxAxP 1.00 MSe = .0398
b. father's opinion									
high per	3.00	2.95	2.88	2.95	2.60	2.72	2.90	2.74	Sex(S) 2.25 Apt(A) .81
normal Per	2.83	3.16	3.08	3.03	2.72	3.32	3.18	3.07	Per(P) 1.56 S x A 3.14*
low Per	3.38	3.18	2.80	3.12	2.69	2.60	3.22	2.84	S x P 1.06 A x P 1.16
M	3.07	3.10	2.92	3.03	2.67	2.88	3.10	2.89	SxAxP 1.04 MSe = .0419
2. Father's dominance in decisionmaking about family matters									
a. mother's opinion									
high Per	3.33	3.29	3.06	3.23	2.94	3.18	3.26	3.13	Sex(S) .09 Apt(A) .12
normal Per	3.32	3.11	3.47	3.29	3.20	3.11	3.47	3.26	Per(P) 3.83* S x A .55
low Per	2.95	3.00	2.82	2.92	3.00	3.00	2.92	2.97	S x P .20 A x P .86
M	3.20	3.13	3.12	3.15	3.05	3.09	3.22	3.12	SxAxP .27 MSe = .0445

Table 21 (cont.)

b.father's opinion	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	3.11	3.32	3.25	3.23	3.07	3.00	3.20	3.09	Sex(S) .03 Apt(A) .64
normal Per	3.28	3.11	3.21	3.20	3.29	3.17	3.17	3.21	Per(P) .15 S x A 1.44
low Per	3.31	3.44	3.60	3.12	3.13	3.25	3.22	3.20	S x P .63 A x P 1.71
M	3.24	3.29	3.02	3.18	3.17	3.14	3.20	3.17	SxAxP 1.36 MSe = .0295
3.Father's dominance in decisionmaking about money matters									
a.mother's opinion									
high Per	3.61	3.29	3.24	3.38	3.25	3.41	3.37	3.34	Sex(S) .09 Apt(A) .86
normal Per	3.47	3.11	3.53	3.37	3.40	3.05	3.53	3.33	Per(P) 1.03 S x A .03
low Per	3.05	3.22	3.00	3.09	3.56	3.18	3.08	3.27	S x P .43 A x P .94
M	3.38	3.21	3.25	3.25	3.40	3.21	3.33	3.31	SxAxP .70 MSe = .0577
b.father's opinion									
high Per	3.56	3.42	3.41	3.47	3.47	3.61	3.60	3.56	Sex(S) 1.56 Apt(A) 1.17
normal Per	3.67	3.32	3.43	3.47	3.59	3.28	3.39	3.42	Per(P) .21 S x A .54
low Per	3.25	3.88	2.93	3.16	3.63	3.81	3.56	3.67	S x P 1.24 A x P 2.42*
M	3.49	3.54	3.26	3.43	3.56	3.57	3.52	3.55	SxAxP .63 MSe = .0405

* $p < .05$
** $p < .01$

Table 22

Establishment of Parents and Siblings as Models as a Function of Aptitude (Apt), Performance (Per) ans Sex

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1. Number of male children in family										
high Per	1.78	2.06	1.74	1.86	.94	1.00	.89	.94	Sex (S)	99.67*
normal Per	2.05	2.16	1.95	2.05	1.16	.68	.82	.89	Apt (A)	.75
									Per (P)	.28
low Per	1.79	2.11	1.65	1.85	.82	.94	1.00	.92	SxA	1.32
M	1.87	2.11	1.78	1.92	.97	.88	.90	.92	SxP	.66
									AxP	.54
									SxAxP	.27
									MSe=	.045
2. Number of female children in family										
high Per	.89	.72	1.11	.91	2.06	1.72	1.53	1.77	Sex (S)	81.30*
normal Per	1.37	.79	.89	1.02	2.10	1.63	1.88	1.87	Apt (A)	3.38*
									Per (P)	3.36*
low Per	1.32	1.00	.94	1.09	2.29	2.18	2.29	2.25	SxA	.06
M	1.19	.84	.98	1.00	2.15	1.84	1.90	1.96	SxP	.93
									AxP	.29
									SxAxP	.97
									MSe=	.051
3. Frequency of setting up father as an example										
a. by the mother										
high Per	1.71	1.72	1.44	1.66	1.69	1.69	1.61	1.66	Sex (S)	.71
normal Per	1.95	2.00	1.71	1.88	1.44	1.61	1.80	1.62	Apt (A)	.74
									Per (P)	.63
low Per	1.67	1.68	2.00	1.78	2.00	2.00	1.29	1.76	SxA	.11
M	1.78	1.80	1.71	1.77	1.71	1.77	1.57	1.68	SxP	.85
									AxP	.22
									SxAxP	2.58*
									MSe=	.045
b. by the father										
high Per	1.89	1.74	1.24	1.62	1.53	1.61	1.35	1.50	Sex (S)	5.42*
normal Per	1.83	1.79	1.43	1.69	1.31	1.72	1.44	1.50	Apt (A)	3.52*
									Per (P)	.14
low Per	1.53	1.76	2.00	1.77	1.77	1.56	1.11	1.47	SxA	.17
M	1.75	1.77	1.56	1.69	1.53	1.64	1.34	1.49	SxP	.33
									AxP	.65
									SxAxP	3.16*
									MSe=	.034

Table 22(cont.)

4. Frequency of setting up mother as an example	Males				Females				F-ratios
a. by the mother									
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	1.18	1.32	1.17	1.22	1.38	1.41	1.32	1.37	Sex(S) .33 Apt(A) 1.93
normal Per	1.68	1.89	1.35	1.64	1.60	1.42	1.33	1.45	Per(P) 4.42* S x A .24
low Per	1.42	1.11	1.50	1.34	1.50	1.73	1.29	1.51	S x P 2.78 A x P .71
M	1.43	1.44	1.34	1.40	1.49	1.52	1.31	1.44	SxAxP 2.69* MSe = .0219
b. by the father									
high Per	1.75	1.53	1.38	1.55	1.93	1.82	1.39	1.72	Sex(S) .44 Apt(A) 1.89
normal Per	1.93	1.83	1.54	1.74	1.53	1.75	1.61	1.63	Per(P) .21 S x A .73
low Per	1.59	1.81	2.07	1.83	1.86	1.67	1.25	1.59	S x P 1.34 A x P .48
M	1.76	1.73	1.66	1.72	1.78	1.75	1.42	1.65	SxAxP 1.62 MSe = .0478

5. Frequency of setting up a brother as an example									
a. by the mother									
high Per	1.25	1.11	1.20	1.19	1.22	1.10	1.00	1.11	Sex(S) .68 Apt(A) 2.39
normal Per	1.08	1.43	1.36	1.29	1.20	1.63	1.00	1.28	Per(P) 1.43 S x A 2.97*
low Per	1.09	1.00	1.00	1.03	1.50	1.40	1.00	1.30	S x P 2.28 A x P 2.06
M	1.14	1.18	1.19	1.17	1.31	1.38	1.00	1.23	SxAxP .22 MSe = .0227

Table 22(cont.)

b. by the father	Males				Females				F-ratios
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M	
high Per	1.33	1.18	1.17	1.23	1.00	1.15	1.15	1.11	Sex(S) .00 Apt(A) 1.00
normal Per	1.67	1.08	1.00	1.25	1.11	1.64	1.30	1.39	Per(P) 1.40 S x A 3.06*
low Per	1.27	1.38	1.08	1.25	1.31	1.10	1.33	1.25	S x P 1.01 A x P .48
M	1.43	1.22	1.09	1.25	1.18	1.30	1.27	1.25	SxAxP 2.29 MSe = .0248

6. Frequency of setting up a sister as an example

a. by the mother									
high Per	1.14	1.08	1.00	1.08	1.45	1.22	1.13	1.27	Sex(S) 3.95 Apt(A) 2.51
normal Per	1.09	1.20	1.38	1.23	1.07	1.50	1.10	1.22	Per(P) .45 S x A 1.52
low Per	1.23	1.21	1.00	1.15	1.42	1.50	1.09	1.34	S x P 1.01 A x P 2.16
M	1.15	1.17	1.13	1.15	1.31	1.41	1.11	1.15	SxAxP .71 MSe = .0181

b. by the father									
high Per	1.38	1.20	1.10	1.23	1.27	1.09	1.09	1.15	Sex(S) .11 Apt(A) 3.19*
normal Per	1.67	1.40	1.00	1.29	1.42	1.58	1.30	1.44	Per(P) 1.29 S x A .03
low Per	1.21	1.44	1.25	1.31	1.57	1.27	1.13	1.33	S x P .51 A x P .23
M	1.43	1.28	1.12	1.28	1.42	1.32	1.18	1.31	SxAxP 1.42 MSe = .0362

* p < .05
** p < .01

Table 23

Measures of Similarity to Parents as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1. Similarity to mother in opinions										
a. student's estimate										
high Per	3.42	3.56	3.16	3.38	3.50	3.75	3.40	3.55	Sex (S)	9.40**
normal Per	3.32	3.26	3.16	3.25	3.90	3.80	3.45	3.72	Apt (A)	2.94
									Per (P)	4.56*
low Per	2.89	3.16	2.84	2.96	2.95	3.65	3.30	3.30	SxA	.21
M	3.21	3.33	3.05	3.20	3.45	3.73	3.38	3.52	SxP	.66
									AxP	.91
									SxAxP	.34
									MSe=	.0509
b. mother's estimate										
high Per	3.89	3.74	3.71	3.78	3.53	3.94	3.84	3.77	Sex (S)	8.05**
normal Per	3.58	3.47	3.32	3.46	3.85	3.89	4.00	3.91	Apt (A)	.01
									Per (P)	1.97
low Per	3.63	3.32	3.50	3.49	3.59	3.76	3.71	3.69	SxA	2.90
M	3.70	3.51	3.51	3.57	3.66	3.87	3.86	3.79	SxP	2.99
									AxP	.24
									SxAxP	.40
									MSe=	.0271
2. Similarity to father in opinions										
a. student's estimate										
high Per	3.21	3.64	3.22	3.39	3.47	3.40	3.60	3.49	Sex (S)	4.42*
normal Per	3.11	3.47	3.41	3.33	3.55	3.84	3.40	3.60	Apt (A)	1.75
									Per (P)	.17
low Per	3.53	3.28	2.89	3.23	3.80	3.56	3.28	2.54	SxA	.37
M	3.28	3.50	3.18	3.32	3.61	3.60	3.43	3.54	SxP	.35
									AxP	1.54
									SxAxP	.82
									MSe=	.0525
b. father's estimate										
high Per	3.67	3.84	3.35	3.62	3.33	4.06	3.40	3.60	Sex (S)	2.44
normal Per	3.28	3.16	3.50	3.32	3.76	3.79	3.28	3.61	Apt (A)	1.18
									Per (P)	3.03*
low Per	3.29	3.06	3.60	3.32	3.79	3.25	3.22	3.42	SxA	3.93*
M	3.42	3.36	3.49	3.42	3.63	3.70	3.30	3.55	SxP	1.35
									AxP	4.01**
									SxAxP	2.18
									MSe=	.0292

Table 23 (cont.)

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
3. Similarity to mother relative to father in beliefs										
a. mother's estimate										
high Per	3.00	2.50	3.00	2.83	3.06	3.11	3.21	3.13	Sex (S)	11.27**
normal Per	2.89	2.62	2.56	2.69	3.05	2.94	3.18	3.06	Apt (A)	1.12
									Per (P)	.76
low Per	2.88	2.33	2.75	2.66	2.62	3.25	3.15	3.01	SxA	3.37*
M	2.93	2.49	2.73	2.73	2.91	3.10	3.18	3.06	SxP	.05
									AxP	.41
									SxAxP	.95
b. father's estimate									MSe=	.0392
high Per	2.65	2.53	3.50	2.89	3.07	3.06	3.40	3.17	Sex (S)	3.29
normal Per	2.94	2.83	3.23	3.00	3.31	2.95	2.82	3.02	Apt (A)	2.99
									Per (P)	.12
low Per	2.43	3.00	3.13	2.85	3.00	3.29	3.00	3.09	SxA	4.00*
M	2.67	2.78	3.28	2.91	3.12	3.10	3.07	3.10	SxP	.61
									AxP	2.75*
									SxAxP	.14
4. Similarity of occupational plans to ideals of mother									MSe=	.0464
a. student's estimate										
high Per	3.41	3.33	3.22	3.32	3.47	3.63	3.44	3.84	Sex (S)	7.15**
normal Per	3.22	3.21	2.93	3.12	3.61	3.63	3.53	3.59	Apt (A)	1.42
									Per (P)	4.62**
low Per	3.06	3.13	3.12	3.10	3.19	3.26	2.94	3.13	SxA	.10
M	3.23	3.22	3.09	3.18	3.42	3.50	3.30	3.41	SxP	2.28
									AxP	.04
									SxAxP	.41
b. mother's estimate									MSe=	.0329
high Per	3.86	3.53	3.73	3.71	3.73	3.30	3.71	3.58	Sex (S)	.00
normal Per	3.31	3.50	3.18	3.33	3.94	3.21	3.36	3.51	Apt (A)	3.67*
									Per (P)	2.64
low Per	3.77	3.31	3.29	3.45	3.38	3.36	3.44	3.40	SxA	.73
M	3.64	3.45	3.40	3.50	3.68	3.29	3.51	3.49	SxP	1.00
									AxP	.58
									SxAxP	1.66
									MSe=	.0376

Table 23 (cont.)

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
5. Similarity of occupational plans to father's ideals										
a. student's estimate										
high Per	3.34	3.37	3.35	3.32	3.50	3.56	3.31	3.46	Sex (S)	6.23*
normal Per	3.17	3.16	3.08	3.14	3.67	3.47	3.14	3.43	Apt (A)	.66
									Per (P)	1.56
low Per	3.19	4.00	3.11	3.10	3.19	3.41	3.33	3.31	SxA	.62
M	3.20	3.18	3.18	3.18	3.45	3.48	3.26	3.40	SxP	.25
									AxP	.54
									SxAxP	.57
b. father's estimate									MSe=	.0331
high Per	3.73	3.27	3.50	3.50	3.30	3.50	3.29	3.37	Sex (S)	.37
normal Per	4.00	4.00	3.17	3.06	3.38	2.92	3.50	3.27	Apt (A)	.23
									Per (P)	1.95
low Per	3.45	3.58	3.45	3.50	3.14	3.30	3.20	3.22	SxA	.05
M	3.40	3.29	3.38	3.35	3.28	3.24	3.33	3.28	SxP	1.63
									AxP	.67
									SxAxP	.74
6. Similarity of occupational plans to work of mother									MSe=	.0596
a. student's estimate										
high Per	1.59	2.11	1.67	1.79	1.53	2.19	2.07	2.15	Sex (S)	18.13**
normal Per	2.00	1.53	1.31	1.61	2.22	2.13	2.44	2.42	Apt (A)	1.83
									Per (P)	.43
low Per	1.75	1.73	1.50	1.63	2.20	2.94	1.94	1.98	SxA	1.62
M	1.78	1.73	1.49	1.68	1.98	2.42	2.15	2.19	SxP	2.43
									AxP	2.04
									SxAxP	1.20
b. mother's estimate									MSe=	.0611
high Per	1.57	1.67	1.47	1.57	2.73	1.50	1.85	1.69	Sex (S)	13.92**
normal Per	1.77	1.15	1.30	1.41	2.22	1.86	2.09	2.06	Apt (A)	.30
									Per (P)	.36
low Per	1.40	1.31	1.09	1.27	1.58	2.50	1.75	1.94	SxA	.72
M	1.58	1.38	1.29	1.52	1.84	1.95	1.90	1.90	SxP	1.94
									AxP	1.58
									SxAxP	.83
									MSe=	.0755

Table 23 (cont.)

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
c. father's estimate										
high Per	1.14	1.54	1.64	1.44	2.00	1.67	1.94	1.87	Sex (S)	14.21**
normal Per	1.21	1.29	1.50	1.33	1.86	1.92	2.10	1.95	Apt (A)	.67
									Per (P)	.40
low Per	1.36	1.42	1.27	1.35	1.64	1.70	1.80	1.71	SxA	.33
M	1.24	1.41	1.47	1.37	1.83	1.76	1.95	1.85	SxP	.39
									AxP	.14
									SxAxP	.42
7. Similarity of occupational plans to work of father									MSe=	.0706
a. student's estimate										
high Per	2.06	2.47	1.88	2.14	1.88	1.75	2.06	1.90	Sex (S)	.02
normal Per	2.35	2.37	1.87	2.20	1.83	2.14	2.44	2.14	Apt (A)	1.04
									Per (P)	1.11
low Per	1.93	2.13	2.37	2.14	2.20	2.81	2.13	2.38	SxA	.52
M	2.12	2.32	2.04	2.16	1.97	2.24	2.21	2.14	SxP	1.07
									AxP	.13
									SxAxP	1.97
b. mother's estimate									MSe=	.0827
high Per	2.29	2.36	1.53	2.06	1.82	1.45	1.29	1.52	Sex (S)	7.53**
normal Per	1.93	1.27	1.92	1.71	1.11	1.71	1.64	1.49	Apt(A)	.02
									Per (P)	.93
low Per	1.53	1.60	2.14	1.76	1.42	1.73	1.43	1.53	SxA	.86
M	1.92	1.74	1.87	1.84	1.45	1.64	1.45	1.51	SxP	.75
									AxP	2.48*
									SxAxP	2.25
c. father's estimate									MSe=	.0655
high Per	2.06	2.20	1.50	1.92	1.73	1.53	1.47	1.58	Sex (S)	6.89**
normal Per	1.85	1.60	1.86	1.77	1.53	2.00	1.37	1.60	Apt (A)	.26
									Per (P)	.11
low Per	1.79	1.77	2.27	1.94	1.31	1.45	1.50	1.42	SxA	.37
M	1.90	1.86	1.88	1.88	1.52	1.64	1.41	1.53	SxP	.61
									AxP	1.15
									SxAcP	1.15
									MSe=	.0773

* $p < .05$
** $p < .01$

Sex

1. Mothers of females had more education than mothers of males ($p < .10$; Table 19-1a)
2. Fathers of females had more education than fathers of males (Table 19-1b)
3. Parents of females attached less importance to their child's attending college than did parents of males (Table 19-3).
4. Both parents of females believed college to be more important for a woman than did parents of males, but did not differ from parents of males in their belief that college is important for a man, (Table 19-6, 19-5).
5. Both parents of females believed college to be less important for obtaining a well-paying job than did parents of males (Table 19-8).
6. Both parents of females believed it to be more important that their child join a fraternity or sorority than did parents of males (Table 19-9).
7. Parents of males believed their child had failed to meet previous expectations to a greater extent than did parents of females (Table 20-6).
8. Males were expected by both parents to perform better relative to high school than were females (Table 20-4).
9. Fathers of females set up themselves as examples less frequently than did fathers of males (Table 22-3b).
10. According to students' estimates, females were more similar to both parents in opinions and beliefs than were males (Table 23-1a,2a).
11. According to mothers' estimates, high-Apt and normal-Apt females were more similar to their mothers in opinions and beliefs, both absolutely and relative to their fathers, than were high-Apt and normal-Apt males, respectively (Table 23-1b, 3a).
12. According to fathers' estimates, low-Apt and normal-Apt females were more similar to their fathers in opinions and beliefs, but less similar to their fathers relative to their mothers, than were low-Apt and normal-Apt males, respectively (Table 23-2b, 3b).
13. Males believed that their occupational plans were less similar to the ideals their mothers held for them than did females; however, this difference was not corroborated by opinions of the mothers themselves (Table 23-4)
14. Males believed that their occupational plans were less similar to the ideals their fathers held for them than did females; however, this difference was not corroborated by opinions of the fathers (Table 23-5).
15. The occupational plans of males, as indicated by both themselves and their parents, were less similar to their mothers' occupations than were the occupational plans of females (Table 23-6).
16. The occupational plans of males were seen by both their mothers and their fathers, but not by themselves, as more similar to their fathers' occupations than were the plans of females (Table 23-7).

Table 24

Quality of Relations with Parents as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1. How well student gets along with his mother										
a. student's opinion										
high Per	4.37	4.56	3.95	4.33	4.45	4.26	3.85	4.19	Sex (S)	.10
normal Per	4.32	4.21	4.00	4.18	4.25	4.30	4.45	4.33	Apt (A)	1.41
									Per (P)	6.45**
low Per	3.89	3.63	4.00	3.84	3.45	4.40	3.89	3.91	SxA	1.21
M	4.23	4.13	3.98	4.11	4.05	4.32	4.06	4.15	SxP	.79
									AxP	2.26
									SxAxP	2.12
b. mother's opinion									MSe=	.0441
high Per	4.39	4.32	4.16	4.29	4.35	4.28	4.16	4.26	Sex (S)	.61
normal Per	4.26	3.89	4.22	4.13	4.40	4.21	4.41	4.34	Apt (A)	.36
									Per (P)	1.50
low Per	4.21	4.00	4.18	4.13	3.76	4.29	4.29	4.11	SxA	1.47
M	4.29	4.07	4.19	4.18	4.17	4.26	4.29	4.24	SxP	1.08
									AxP	1.87
									SxAxP	.83
2. How well student gets along with his father									MSe=	.0250
a. student's opinion										
high Per	4.00	4.53	3.76	4.10	4.47	4.05	4.05	4.19	Sex (S)	.94
normal Per	4.11	4.26	3.78	4.05	4.40	4.05	4.15	4.20	Apt (A)	4.22*
									Per (P)	2.75
low Per	4.00	3.78	3.74	3.84	4.11	4.11	3.50	3.90	SxA	1.28
M	4.04	4.19	4.76	4.00	4.33	4.07	3.90	4.10	SxP	.06
									AxP	.15
									SxAxP	1.50
b. father's opinion									MSe=	.0508
high Per	4.22	4.05	4.06	4.45	4.27	4.35	4.05	4.56	Sex (S)	1.46
normal Per	4.00	4.00	4.14	4.38	4.47	4.16	3.83	4.49	Apt (A)	3.37*
									Per (P)	3.45*
low Per	4.12	3.53	3.93	3.86	4.20	3.88	3.78	3.95	SxA	2.44
M	4.12	3.86	4.05	4.01	4.32	4.47	3.89	4.11	SxP	.01
									AxP	.77
									SxAxP	.67
									MSe=	.0323

*$p < .05$
**$p < .01$

Discussion. The indication that parents of females had more education than parents of males is worth noting, particularly since this factor may affect the interpretation of differences between parents of males and parents of females in attitudes and beliefs toward education. Two interpretations seem plausible. (1) Less well-educated parents, while believing that college is important for males, may tend less to believe that college is important for females and therefore are less apt to send their daughters to college. (2) Less well-educated parents are less well off economically and therefore are less able to afford to send their daughters to college than their sons, who are better able to work their way through school. If the first interpretation is correct, opinions concerning the value of education for a woman should be more highly correlated with education level than should opinions on the value of education for a man. This, however, did not appear to be the case. Data in Table 25 show that correlations between education level and the estimated importance of college for both men and women were, if anything, negative. Of the two interpretations offered to account for sex differences in parents' education level, the second therefore appears more justifiable.

Parents of females, compared to parents of males, believed college to be more important for a woman, to be relatively more for social broadening, and to be less important for obtaining a well-paying job. The low correlation of these variables with parents' education level (Table 25) indicates that education does not have an appreciable effect upon the development of these opinions. Conceivably parents answered general questionnaire items as if they pertained specifically to their child rather than to college students in general. If this is true, results support the assumption that parents differentially emphasize the importance of intellectual, vocational and social goals for their child, depending upon the relevance of these goals to their child's ultimate sex-defined social role. In this regard, parents of females believed it was more important for their child to join a social fraternity or sorority, but attached less importance to their child's attending college, than did parents of males. Moreover, males were expected by their parents to perform better relative to high school than were females, and failed to meet parents' previous expectations more frequently. Parents apparently expect male children to be more successful in academic achievement-related activity than they do female children; these expectancies parallel those of the students themselves (Table 13-3,4).

Sex differences in the similarity between students and their parents in opinions and beliefs were contingent on Apt; a discussion of these data is postponed to the following section (page 88).

Males believed their occupational plans to be less similar to both parents' ideals than did females. Parents responses, however, failed to show similar differences. Possibly males, who presumably aspire to a dominant, independent social role, attempt to appear more independent of parental influence than do females.

Table 25

Intercorrelations of Parents Education Level and Attitudes toward College

	1	2	3	4	5	6
1. Education level	---	.071	.076	-.244	.048	.045
2. Importance of college for a man	-.170*	---	.413	.115	-.033	.316*
3. Importance of college for a woman	-.079	.390*	---	.023	-.062	.253*
4. Value of college for obtaining a well-paying job	-.174*	.011	.092	---	.117	.076
5. Value of college for social broadening	.015	.074	-.074	-.150*	---	.136
6. Importance that child attend college	-.005	.269*	.276*	.083	.031	---

[a] Correlations above the diagonal refer to fathers' responses; those below the diagonal refer to mothers' responses

* p < .05

Aptitude

1. Mothers of low-Apt students were less well educated than mothers of students with higher Apt. A similar relationship involving education level of the father was not detected (Table 19-1).
2. The importance attached by fathers to social broadening in college increased with Apt (Table 19-7b).
3. High-Apt students were expected to perform better by both their mothers and their fathers than were normal-Apt and low-Apt students; moreover, the GPA that high-Apt students believed was expected by their parents was higher than the GPA that lower aptitude students believed was expected of them (Table 20-2, 3).
4. The number of female children in the family was related negatively to Apt (Table 22-2).
5. The frequency with which fathers set up themselves as examples to follow was related negatively to Apt (Table 22-3b).
6. Brothers of high-Apt females were set up as examples by their mothers less frequently than were brothers of females lower in Apt. The frequency with which brothers were set up as examples to males was unrelated to Apt (Table 22-5a).
7. Brothers of low-Apt males were set up as examples for them to follow by their fathers more frequently than were brothers of males higher in Apt, or females at all levels of Apt (Table 22-5b).
8. Both high-Apt and low-Apt students judged themselves to be less similar to their mothers in opinions and beliefs than did normal-Apt students ($p<.19$; Table 23-1a).
9. According to *mothers'* estimates, low-Apt females were less similar to their mothers in opinions and beliefs than were females with higher Apt, while males did not differ appreciably as a function of Apt ($p<.10$; Table 23-1b).
10. According to *fathers'* estimates, low-Apt and normal-Apt females were more similar to their fathers in opinions and beliefs than were females with high Apt, while males did not differ as a function of Apt (Table 23-2b).
11. According to *mothers'* estimates of their children's similarity to themselves relative to the father, normal-Apt males were relatively less similar to their mothers than were males of higher or lower Apt or females at all levels of Apt (Table 23-3a).
12. According to *fathers'* estimates of their children's similarity to the mother relative to themselves, low-Apt and normal-Apt males were relatively less similar to their mothers than were high-Apt males or females at all aptitude levels (Table 23-3b).
13. Mothers' responses indicated that the occupational plans of low-Apt students were more similar to the ideals their mothers held for them than were the plans of higher Apt students; this relationship was not detected in analyses of students' estimates of this similarity (Table 23-4).
14. High-Apt students reported getting along less well with their fathers than did normal-Apt or low-Apt students (Table 24-2a).
15. Fathers of low-Apt students reported getting along better with their children than did fathers of high-Apt or normal-Apt students (Table 24-2b).

Discussion. It is surprising that while aptitude was related positively to the educational level of the mother, a similar relationship between aptitude and fathers' education level did not occur. These findings may reflect environmental rather than hereditary influences on the development of academic ability. Mothers spend more time with their children during their early years; they may encourage participation in intellectual activities and reinforce the development of general intellectual skills to the extent that they themselves are educated. However, fathers may play a lesser role in the training of their children and therefore do not have an appreciable influence on the development of these skills.

In fact, fathers appear to emphasize social rather than intellectual broadening more as their children increase in intellectual ability. High aptitude students have relatively asocial personality characteristics (Table 1); it is possible that fathers of these students are aware of these characteristics and consequently see greater need for them to broaden socially while in college. In light of these findings, it is curious that fathers of high-Apt students believe it to be relatively less important that their child join a fraternity or sorority; this relationship, however, only approached significance ($p<.10$).

A further indication of an environmental effect upon aptitude is the negative relationship between Apt and the number of female children in the family. The failure for a similar relationship to occur between Apt and the number of male children indicates that the relationship is not merely due to the fact that large families are more predominant in lower socioeconomic class environments where intellectual abilities are less well developed. Females, according to Cobb (1954), have relatively nonachievement-related interests even at an early age. A large number of female siblings may create a home environment in which intellectual activity is not encouraged, therefore retarding the development of general intellectual skills.

It would seem to follow from this reasoning that students who are encouraged to adopt male achievement-oriented models will develop relatively greater intellectual ability, while students who are encouraged to adopt female models will acquire less skill in these areas. However, evidence consistently contradicts this prediction. Relationships between aptitude and the degree to which parents and siblings were set up as examples to follow suggest that male models, if anything, were set up more often by parents of low-Apt students than by parents of high-Apt students. Conceivably parents attempt to establish a male adult or sibling as a model as a consequence of deficiencies in achievement-related skills that they observe in their children. There is no evidence that direct attempts to establish male parents or siblings as examples facilitate either development of general intellectual skills or, for that matter, academic performance. Nor is there evidence that direct attempts to set up females as models retard the development of these skills. Therefore, the negative relationship of Apt to the number of female siblings may not indicate that a decrement in intellectual ability results from the adoption of females as models but rather that a female-dominated home environment, in which achievement-oriented activity is relatively infrequent, does not give the child either the opportunity or the incentive to develop this ability.

Data pertaining to the similarity in opinions and beliefs between parents and their children were also difficult to interpret clearly. Sex and Apt had significant but different interactive relationships to nearly all indexes of similarity considered. Unfortunately, the estimates by each parent of his spouse's similarity to his child could only be inferred indirectly by considering his responses to items dealing with (a) his own similarity to his child and (b) the relative degree of similarity of himself and his spouse to his child. However, consideration of these data in conjunction suggests that high-Apt females were judged by their mothers to be relatively more similar to their mothers but by their fathers as relatively less similar both to their mothers and to their fathers. High-Apt males, on the other hand, were judged by both parents to be relatively similar to their mothers, but not necessarily more similar to their fathers than were males of lower aptitude.

These results imply that mothers and fathers use considerably different criteria for evaluating their similarity to their children in opinions and beliefs. Conceivably mothers believe that females should acquire intellectual as well as social interests, while fathers may be of the opinion that females should acquire behaviors that typify "femininity" (e.g., submissiveness, warmth, sociability, etc.). Females of high aptitude, who may develop intellectual interests and abilities, also tend to acquire aptitude-related characteristics of aloofness, dominance and assertiveness (Table 1). They may consequently be judged by their mothers as similar to themselves in opinions and beliefs but by their fathers as dissimilar both to themselves and to their wives. Males may also be seen as more similar to their mothers if they have intellectual interests and abilities. However, they may not necessarily be judged as less similar to their fathers because they possess certain aptitude-related traits, such as dominance, that are characteristic of the stereotyped male social role.

The negative relationship between aptitude and the degree to which students get along with their fathers could indicate that the personality characteristics associated with high aptitude, such as dominance, lead to friction between these students and their fathers. These characteristics could have a more detrimental effect upon the quality of father-child relations than on mother-child relations since they conflict more directly with the fathers' dominant family position than with the more submissive, supportive role of the mother.

Performance

1. Mothers' education level was related negatively to Per among high-Apt males (Table 19-1a).
2. Among females, the degree to which mothers liked school when they were students was related positively to Per; among males, the degree to which mothers liked school was related negatively to Per (Table 19-2a).
3. Among low-Apt females, the degree to which students believed that their attending college was important to their parents was related positively to Per (Table 19-4).

4. Fathers of normal-Per females believed college to be more important for a man than did fathers of higher or lower performers, while fathers of normal-Per males believed college to be less important for a man than did fathers of higher or lower performers (Table 19-5b).
5. At high Apt, the degree to which fathers emphasized social broadening increased with Per among males but decreased non-significantly among females. At low Apt, these relationships did not occur. (Table 19-7b).
6. The level of performance expected by both mothers and fathers increased with Per; moreover, the GPA that students believed their parents expected them to attain increased with Per. However, the degree to which parents indicated disappointment if their child were to perform poorly, and the minimum GPA that students believed was acceptable to their parents, were unrelated to Per (Table 20-1, 2, 4).
7. The level of performance that mothers expected their children to attain relative to high school was related negatively to Per among males, but was relatively low at all levels of Per among females (Table 20-3).
8. The degree to which students failed to meet the expectations of both parents in the past was related negatively to Per (Table 20-6).
9. Mothers of normal-Per females and high-Per males judged their husbands to be relatively more dominant in decision-making in disciplinary matters than did mothers of students at other performance levels. Fathers' responses did not corroborate these findings (Table 21-1).
10. Mothers of low-Per students believed themselves to be relatively more dominant in decision-making on family matters than did mothers of higher performers; fathers' opinions failed to corroborate these differences (Table 21-2).
11. Fathers of normal-Apt, low-Per students judged themselves to be more dominant in decision-making about money matters than did fathers of students not fitting this description (Table 21-3b).
12. Per was related negatively to the number of female children in the family (Table 22-2).
13. Among high-Apt males, the frequency with which the father was set up as an example to follow by both parents was related negatively to Per. Among high-Apt females, however, this relationship was positive (Table 22-3).
14. Mothers of normal-Per males set up themselves as examples more frequently than did mothers of high-Per and low-Per males; a similar relationship involving females did not occur (Table 22-4a).
15. Low-Per students judged themselves to be less similar to their mothers in opinions and beliefs than did higher performers (Table 23-1a)
16. According to mothers' judgments of their similarity to their children in opinions and beliefs, normal-Per and low-Per males were less similar to their mothers than were high Per males or females at all performance levels ($p<.10$; Table 23-1b).

17. According to fathers' judgments of their similarity to their children in opinions and beliefs, high-Per students were more similar to their fathers than were lower performers; this relationship was reliable only among students with normal Apt (Table 23-2b).
18. According to both students' and mothers' estimates, low-Per students' plans were less similar to their mothers' ideals than were higher performers' (Table 23-4). (The relationship based upon mothers' responses only approached significance ($p<.10$).)
19. At high-Apt, mothers' estimates of the similarity of their children's occupational plans to the occupation of the fathers was related negatively to Per; at low-Apt, however, this relationship was positive (Table 23-7b).
20. Low-Per students reported getting along less well with their mothers than did higher performers; data obtained from mothers did not confirm these opinions (Table 24-1).
21. Low-Per students reported getting along less well with their fathers than did higher performers ($p<.10$); moreover, fathers of high-Per students reported getting along better with them than did fathers of lower performers (Table 24-2).

Discussion. Performance was expected to be high among males whose fathers believed college to be important and attached value to academic goals. This hypothesis must be unequivocally rejected. Fathers' education level was unrelated to performance among males. Furthermore, while fathers of high-Per males believed college to be more important for a man than did fathers of normal performers, they did not differ from fathers of low performers in this respect. Among high-Apt males, performance increased with the importance attached by fathers to social broadening, rather than to intellectual broadening as had been expected, and was unrelated to the degree to which fathers believed college to be important for vocational goal attainment. Data on the effects of establishing fathers or brothers as examples, and the similarity between males and their fathers, also did not support the hypothesis in question. Finally, while low-Per males reported getting along less well with their fathers, this was also true of low-Per females; moreover, low-Per males also reported less favorable relations with their mothers.

Support for the corresponding hypothesis, that maternal emphasis upon education and academic goals would increase performance among females, was also weak. As expected, the degree to which mothers liked school when they were students was related positively to performance among females but was related negatively to performance among males. However, mothers' education level was related negatively to Per among high-Apt females, while emphasis upon intellectual vs. social goals was unrelated to Per among females at all aptitude levels.

While parents' expectancies for their children's performance before entering college were related positively to Per among both males and females, parents' anticipated disappointment if their children were to perform poorly was unrelated to Per. These data in conjunction suggest that parental expectancies are not motivating factors underlying their children's performance, but merely derive from previous evidence of their children's abilities (e.g. their high school performance). While students who typically perform poorly feel less able to fulfill their parents' expectations, (Table 20-7) there was no indication that the possibility that their parents will be disappointed in their performance inspires them to try to perform better.

Data pertaining to the similarity between students and their parents, and the degree to which parents were set up as examples to follow, generally contradicted the hypothesis that academic performance results in part from the adoption of achievement-oriented parents and siblings as models. Among high-Apt males, who are typically independent and assertive, the frequency of attempts to establish the father as a model was related negatively to Per. These students may react negatively to direct attempts to influence them. Among high-Apt females, on the other hand, establishment of the father as a model appeared to have a beneficial effect on performance; in other words, among females with the capability for high academic achievement the establishment of an achievement-oriented model may increase their actual achievement. The reason for these sex differences is not clear.

Fathers of high performers generally judged themselves to be more similar to their children in opinions and beliefs than did fathers of low performers. However, students' estimates of their similarity to their mothers increased with Per. Moreover, the similarity of students' occupational plans to their mothers' ideals, and the degree to which they reported getting along with their mothers, were also related positively to performance. An "identification" interpretation of these results therefore seems inappropriate. A more reasonable interpretation may be that a similarity between child and parent reflects a firm tie to the home environment that provides stability, and therefore greater goal-seeking effectiveness, in a new environment. This possibility is discussed in more detail in the next section.

Despite these generally negative results, there was some evidence that male dominance in the home facilitated performance while female dominance produced a decrement in performance. For example, Per was related negatively to the number of female children in the family. The interpretation given to a similar relationship between this variable and Apt (p.87) is also appripriate here; that is, the tendency to develop an interest in achievement is diminished when non-achievement oriented female children dominate the home environment. The presence of male siblings, however, does not appear to increase achievement orientation above the amount that exists in students without siblings.

Mothers of low performing students appeared to see themselves as more dominant in decisionmaking on disciplinary and general family matters than did mothers of higher performers. However, fathers' opinions did not confirm this dominance. Mothers of higher performers, regardless of their actual role in decisionmaking, may see themselves as occupying a more submissive or supportive position relative to the father and as a result may implicitly encourage use of the father as a model. It should be noted, however, that the frequency of direct attempts to establish the father as a model was related negatively to performance among high-Apt males. Such attempts appear to have an effect opposite to that intended; however, it could also be that low performance in achievement-related activities is a cause rather than a consequence of attempts to set up the father as a model.

4. Effects of Stability on Effectiveness in Goal-Directed Activity

The research reported thus far was primarily concerned with motivational influences upon academic effectiveness. Consideration was also given to the degree to which behavior patterns conducive to concentrated goal-directed activity had been developed and were likely to occur in new, relatively unfamilar surroundings. The finding in Phase 1 that perserverence (16PF-Q3) was related positively to performance among males offered some support for this assumption. Perserverence in goal-directed activity was expected to predominate among students who had developed stable frames of reference or sets of standards for evaluating their behavior in previous environments, and hence were less apt to be uncertain as to how to behave in unfamiliar surroundings (in this case, college). Based upon this reasoning, it was hypothesized that variables presumably affecting the availability and use of such standards would be related positively to academic performance. These variables were self-acceptance, the congeniality of students' relationship with their parents, the similarity between parents' evaluations of their child, and the degree of authoritarianism and strictness characterizing parental disciplinary practices.

Self-Acceptance

Indexes of self-esteem have been found in other studies (e.g. Mitchell, 1959) to be related positively to intellectual achievement. Self-acceptance, a correlate of self-esteem (Crown, Stephens & Kelly, 1961), may indicate a stability conducive to effective pursuit of chosen goals. For example, persons with high self-acceptance may have less desire to seek and to receive favorable external evaluation of their behavior; they may therefore be more likely to develop intrinsic interest in achievement tasks and to engage in these tasks with less fear of failure. These students may also be less inclined to take part in social activities merely to receive approval from others. Their tendency to persevere in concentrated achievement-related activity should therefore be greater than that of students who have low self-acceptance and hence presumably greater needs to receive social approval.

Results and discussion. Self-acceptance as a function of Apt, Per and sex is shown in Table 26. Analyses of these data indicated that high-Apt students accepted themselves less than did students of lower Apt. On the other hand, self-acceptance was related positively to Per as hypothesized.

In interpreting the relationship of Per to self-acceptance, it should be noted that the dimensions along which acceptance was measured were restricted to those presumably relevant to academic success (see Appendix F). The degree to which these results can be generalized to self-attitudes not directly relevant to academic effectiveness is not known. Nevertheless, the conclusion that high self-acceptance indicates a self-confidence and stability conducive to goal-seeking effectiveness in new environments seems justified.

Table 26

Self-Acceptance and Acceptance by Parents as a Function of Aptitude (Apt) Performance (Per) and Sex

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1. Self-acceptance										
high Per	88.7	92.3	90.2	90.4	92.0	92.2	90.3	91.5	Sex (S)	.00
normal Per	93.4	92.9	87.4	91.2	90.3	91.3	88.0	89.8	Apt (A)	4.18*
									Per (P)	6.45*
low Per	87.1	87.6	80.5	85.1	88.0	88.6	79.5	85.3	SxA	.02
M	89.7	90.9	86.4	88.9	90.0	90.7	85.7	88.9	SxP	.25
									AxP	.85
									SxAxP	.22
									MSe=	9.53
2. Acceptance by mother										
high Per	103.0	104.2	95.9	101.0	105.0	102.9	103.9	103.8	Sex (S)	10.71*
normal Per	101.7	94.2	95.1	97.0	106.8	100.2	103.6	103.5	Apt (A)	3.41*
									Per (P)	3.52*
low Per	101.0	92.8	92.3	95.3	99.1	101.6	99.9	100.2	SxA	1.56
M	101.9	97.0	94.4	97.9	103.6	101.5	102.4	102.5	SxP	.54
									AxP	.73
									SxAxP	.77
									MSe=	9.32
3. Acceptance by father										
high Per	104.4	99.2	103.5	102.3	102.9	103.3	105.0	103.7	Sex (S)	1.03
normal Per	101.8	101.3	95.1	99.4	105.0	101.4	100.4	102.2	Apt (A)	2.57
									Per (P)	5.72*
low Per	100.2	89.8	101.4	97.1	99.3	94.9	97.7	97.3	SxA	.36
M	102.1	96.8	100.0	99.6	102.4	99.9	101.0	101.1	SxP	.29
									AxP	1.83
									SxAxP	.78
									MSe=	9.09

* $p < .05$
** $p < .01$

It is still unclear whether students with high self-acceptance perform well because they have more confidence in achievement situations, or whether they perform well because they are less dependent upon social evaluation and therefore are more apt to concentrate on achievement-related rather than social activities. There is some indirect evidence in favor of the second interpretation. If low self-acceptance is detrimental to performance because it leads to lack of confidence, and therefore to anxiety in achievement related tasks, then test anxiety, a more direct measure of lack of confidence in such tasks, should also be related to academic performance. However, data in Table 31 (p. 111) show that test anxiety was unrelated to Per (although it was strongly related to Apt and sex). The findings involving test anxiety are discussed in a later section (p. 116).

The negative relationship between self-acceptance and aptitude is worth noting. High-Apt students may be less self-satisfied in academic areas because of their greater intellectual interests (Table 1). A second possibility is that parents and teachers who realize that students have high ability place greater demands upon them in intellectual areas. The findings that mothers' acceptance of their children was related negatively to Apt (Table 26-2), particularly among males, suggest this. A third interpretation, which emphasizes the environmentally-determined component of aptitude, is that lack of acceptance in academic activities increases the tendency to develop intellectual skills. This interpretation, however, should apply equally well to the relationship between self-acceptance and academic performance; however, this relationship is opposite to what would be predicted on this basis the interpretation in question..

Quality of Parent-Child Relations

Concentrated goal-directed activity in an unfamiliar environment was expected to be facilitated by the development of a strong positive attachment to the home environment. It was reasoned that students who are assured of a favorable evaluation by their parents are less likely to devote excessive time toward seeking favorable evaluation in social environments outside the home, such as college. Moreover, students who are accepted by their parents may be better able to rely upon their home environment for criteria to evaluate their behavior; their tendency to seek acceptance in the college environment may therefore be less strong. The degree to which students felt similar to their parents in attitudes and values was also assumed to reflect this stability, and therefore was also expected to be related positively to academic performance.

Results and discussion. Measures relevant to the hypotheses outlined above were mothers' and fathers' acceptance of their children, parents' and students' opinions concerning the quality of parent-child relationships, and the similarity between students and their parents in opinions and goals. Data pertaining to parents' acceptance of their children are presented in Table 26; other data relevant to these hypotheses were reported in previous sections (Tables 23 and 24). Results involving performance are summarized below:

1. Maternal acceptance was related positively to Per (Table 26-2).
2. Paternal acceptance was related positively to Per (Table 26-3).
3. Low-Per students reported getting along less well with their mothers than did higher performers; mothers opinions did not reflect these differences, however (Table 24-1).
4. Low-Per students reported getting along less well with their fathers than did higher performers ($p<.10$). Fathers of low-Per and normal-Per students reported getting along less well with them than did fathers of high-Per students (Table 24-2).
5. Low-Per students judged themselves to be less similar to their mothers in opinions and beliefs than did higher performers (Table 23-1a).
6. According to mothers' judgments of their similarity to their children in opinions and beliefs, normal-Per and low-Per males were less similar to their mothers than were high-Per males or females at all performance levels (Table 23-1b).
7. According to fathers' judgments of their similarity to their children in opinions and beliefs, high-Per students were more similar to their fathers than were lower performers; however, this relationship was reliable only among students of normal Apt (Table 23-2b).
8. Low-Per students judged their occupational plans to be less similar to the ideals their mothers held for them than did higher performers. Mothers' opinions concerning this similarity tended to confirm this relationship ($p<.10$; Table 23-4).

Relationships between parental acceptance and performance are therefore consistent with the general hypothesis that if students are accepted in their home environment, they have less need to feel socially accepted by persons in the college environment and therefore are better able to concentrate upon pursuit of academic goals. A reasonable criticism of this interpretation, and also that given to the relationship between self-acceptance and performance, stems from the possibility that all acceptance measures are consequences of the level of academic performance attained in high school. While no direct information was available on this issue, indirect evidence suggested that this confounding, although possible, was not a serious factor in the relationship reported here. Although mothers' and fathers' acceptance of their children were moderately correlated with one another ($r=.55$), neither was correlated substantially with students' self-acceptance ($r<.18$ in both cases). It therefore seems unlikely that parental acceptance and self-acceptance are primarily a function of a common factor such as high school performance level.

The low correlations between self-acceptance and parents' acceptance suggest further that the establishment of stable internal standards for evaluating one's behavior in college (indicated by self-acceptance), and the availability of stable external standards outside the college environment to rely upon (indicated by high parental acceptance), may act independently to decrease the tendency to seek favorable social evaluation in the college environment and therefore to increase academic goal-seeking effectiveness.

Results based upon students' judgments of how well they got along with their parents, and their similarity to their parents, also provided fairly strong support for the hypothesis that congenial family relationships create a stability conducive to academic goal-seeking effectiveness in college. This was particularly true in the case of mother-child relationships. The quality of the student's relationship with his mother may be a better indication of the strength of his tie to the home environment than his relations with his father due to his relatively greater contact with his mother during formative years.

Results of analyses of parents' opinions concerning the quality of parent-child relations and parent-child similarity did not strongly confirm the results of analyses of students' opinions on these issues. However, in no case were relationships obtained in analyses of parent data (Table 23 and 24). Students' opinions may be better indications of their reliance upon the home environment for support than are parents' opinions. Mothers may believe that the admission of failure to get along with their children is tantamount to admission of personal failure in their role as primary caretaker. The lack of relationship between their responses to this question and Per could be attributed to this factor. If fathers do not feel this inhibition, their estimates may be more strongly related to Per, as results indicate.

Between-Parent Differences in Evaluating their Child

The frequency of concentrated goal-directed behavior should depend largely upon the consistency with which these activities have previously been reinforced. Differences between parents' evaluation of their child's behavior may prevent the child from learning patterns that consistently lead to positive evaluation by others or what behavior can be relied upon to attain desired goals. Furthermore, it may create ambivalence as to the value of the goals being sought. Put somewhat differently, differences between parents in the evaluation of their child's behavior may prevent the child from developing generalized expectancies as to how persons will respond to him. This ambiguity may be detrimental to concentrated goal-directed activity in new situations outside the home.

Results and discussion. To measure parental disagreement with regard to the criteria used in evaluating their child, the absolute difference between the mother's evaluation and the father's evaluation was first calculated for each of the 24 personality dimensions listed in Appendix F. These differences were then summed over dimensions. A low difference score was assumed to indicate high similarity between parents in the standards used for evaluating their child. The mean difference between parents in evaluating students at each combination of Apt, Per and sex is shown in Table 27. While analyses of these data yielded no significant results, the relationship was in the predicted direction among high-Apt females and normal-Apt students of both sexes. Because this relationship, if reliable, was felt to be of particular relevance to the general hypothesis under consideration, additional analyses were performed using the entire sample of subjects whose mothers and fathers had both returned questionnaires. This sample consisted of 320 males and 376 females.

Table 27

Between-Parent Differences in Evaluating their Child as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M	
high Per	12.6	12.4	14.7	13.2	13.3	11.6	11.1	12.0	Sex (S)
									Apt (A)
normal Per	15.7	14.6	14.1	14.8	11.6	13.0	12.7	12.4	Per (P)
									SxA
low Per	11.2	17.8	14.6	14.5	14.5	13.5	13.2	13.7	SxP
									AxP
M	13.1	14.9	14.5	14.2	13.1	12.7	12.3	12.7	SxAxP
									MSe=

An analysis of the entire sample as a function of Apt, Per and sex without using matching procedures would create difficulties in interpretation as discussed earlier (p 7). Relationships involving aptitude and performance were therefore analyzed separately. In addition, a second measure of academic effectiveness was used; this measure, labeled academic achievement (Ach), was defined for each subject as the discrepancy in standard scores between Per and Apt. This measure was assumed to reflect differences in academic effectiveness measured independently of aptitude. Males and females were divided on each academic variable into highs (those with scores over 1 sigma above the mean), normals (those with scores within 1 sigma above and below the mean) and lows (those with scores over 1 sigma below the mean).

The mean discrepancy between parents' evaluations of their child as a function of sex and each academic variable is shown in Table 28. Analyses of variance of these data indicated that while the magnitude of between-parent differences in evaluating their child was unrelated to aptitude, it was significantly negatively related to both Per and Ach. These results support the hypothesis under consideration. More generally, they support the view that differences between parents in the criteria used to evaluate their child do not allow him to develop firm standards for evaluating his own behavior once he leaves the home environment, and therefore decrease the likelihood of his adopting and persevering in behavior required for effectiveness in goal seeking.

Parental Childrearing Attitudes and Practices

A positive relationship between the academic achievement of junior high school students and the authoritarianism of their parents' childrearing attitudes has been reported by Drews & Teahan (1957). This relationship may generalize to the college population. Authoritarian child rearing, which presumably entails the strict enforcement of rules of behavior, may lead to the development of rigid internal standards for self-evaluation that are conducive to goal-seeking effectiveness in a new, potentially distracting environment. Students who have developed such rigid standards in the home may feel less uncertain as to how to behave in the college environment, and therefore may perform better academically.

It should be noted that authoritarian child-rearing practices may be more prevalent among less well educated parents (Hyman and Sheatsley, 1954); if students' academic performance is related negatively to their parents' education level, a negative relationship between parental authoritarianism and children's performance might be expected. However, in this sample fathers' education level was not reliably related to Per, while the relationship between Per and mothers' education level was complex (Table 19-1). These relationships were not considered to be strong enough to override the hypotheses suggested above.

Results and discussion. Two types of parental child-rearing indexes were available. Opinions of both students and their parents concerning the frequency of punishment, strictness of punishment and amount of independence allowed are shown as a function of Apt, Per and sex in

Table 28

Between-Parent Differences in Evaluating their Child as a Function of Academic Variables and Sex--Total Sample

1. Apt and Sex	low Apt	normal Apt	high Apt	M	F-ratios	
Males	13.3(40)^{a}	13.0(224)	14.8(56)	13.7	Sex	.67
					Apt	2.80
Females	14.0(57)	12.5(256)	13.1(63)	13.2	Sex x Apt	2.57
M	13.7	12.8	14.0	13.5	MSe=	.560

2. Per and Sex	low Per	normal Per	high Per	M	F-ratios	
Males	14.7(42)	13.3(218)	12.6(60)	13.5	Sex	.10
Females	15.4(43)	12.6(269)	12.0(64)	13.3	Per	13.62*
					Sex x Per	1.00
M	15.1	13.0	12.3	13.4	MSe=	.607

3. Achievement (Ach) and Sex	low Ach	normal Ach	high Ach	M	F-ratios	
Males	14.2(48)	13.6(219)	11.7(53)	13.2	Sex	.00
Females	15.1(56)	12.5(256)	12.0(64)	13.2	Ach	6.94**
					Sex x Ach	.93
M	14.7	13.1	11.9	13.2	MSe=	.568

[a] N in each cell given in parentheses

** $p < .01$

* $p < .05$

Table 29. Scores on PARI subscales as a function of academic variables are presented in Table 30. The following results involving sex were significant:

1. Males were punished more frequently, according to their parents, than were females; students' own opinions did not show these differences (Table 29-3).
2. Females reported that they were given less independence by their fathers between the ages of 13 and 17 than did males. Fathers opinions did not confirm this relationship (Table 29-5).

The following results involving aptitude occurred:

1. Maternal strictness, as reported by students, was related negatively to Apt; opinions of mothers on this issue did not show this relationship (Table 29-1, 2).
2. Students' estimates of the amount of independence they were allowed by both parents before the age of 12, and by the mother between the ages of 13 and 17, increased with Apt (Table 29-4, 5a).
3. Fathers' estimates of the amount of independence they allowed their children between 13 and 17 increased with Apt (Table 29-5d).
4. Mothers of low-Apt students were higher than mothers of normal-Apt or low-Apt students on child-rearing scales assumed to indicate ascendence, overpossessiveness and authoritarian control (Table 30-1c, 1d, 1e).

The following results involving performance occurred:

1. Low-Per students judged the punishment they received from their parents to be less fair than did higher performers (Table 29-2).
2. Fathers of low-Per students reported punishing their child more frequently than did fathers of higher performers; this relationship was appreciable, however, only among students of normal or high-Apt (Table 29-3d).
3. Among low-Apt students, Per was related positively to the amount of independence students believed they were allowed by their mothers between 13 and 17; among high-Apt students, however, the relationship between these variables was negative (Table 29-5a).
4. No relationships between Per and general child-rearing (PARI) factors were significant (Table 30).

There is therefore no support whatsoever for the hypothesis that authoritarian or punitive child rearing leads to the development of rigid behavior patterns conducive to goal-seeking effectiveness. The relationships involving performance that did reach significance were, if anything, in the opposite direction to that expected. These results therefore did not confirm earlier findings by Drews & Teahan (1957) that parents of high achievers in high school were more dominating. Conceivably, childrearing variables affecting performance in high school do not continue to affect performance once children enter college. When students are living at home, authoritarian parents may be able to enforce perseverence in academic achievement-related activity more directly, and therefore increase their children's academic effectiveness. Once students leave the home environment, however, this influence is unable to be maintained.

Table 29

Students' and Parents' Opinions Concerning Disciplinary Practices as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1. Strictness										
a. of mother (student's opinion)										
high Per	2.68	2.32	2.53	2.51	2.70	2.55	2.75	2.67	Sex (S)	.46
normal Per	2.74	2.84	2.58	2.72	2.90	2.85	2.50	2.75	Apt (A)	4.17*
									Per (P)	1.23
low Per	2.95	2.47	2.58	2.67	2.90	2.60	2.40	2.63	SxA	.26
M	2.79	2.54	2.56	2.63	2.83	2.67	2.55	2.68	SxP	.54
									AxP	1.85
									SxAxP	.38
									MSe=	.0265
b. of the father (student's opinion)										
high Per	3.05	2.47	2.44	2.66	2.68	2.60	3.15	2.81	Sex (S)	1.30
normal Per	2.74	3.05	2.68	2.82	2.90	3.00	3.00	2.97	Apt (A)	.96
									Per (P)	1.07
low Per	3.00	2.74	2.78	2.84	3.00	2.58	3.00	2.86	SxA	2.77
M	2.93	2.75	2.64	2.77	2.86	2.73	2.05	2.88	SxP	.21
									AxP	1.42
									SxAxP	.93
									MSe=	.0388
2. Fairness of punishment										
a. by mother (student's opinion)										
high Per	3.74	3.67	3.47	3.63	3.40	3.65	3.50	3.52	Sex (S)	.19
normal Per	3.26	2.67	3.53	3.49	3.65	3.65	3.60	3.63	Apt (A)	1.23
									Per (P)	4.76*
low Per	3.63	3.32	3.32	3.42	3.10	3.45	3.35	3.30	SxA	1.13
M	3.54	3.55	3.44	3.51	3.38	3.58	3.48	3.48	SxP	1.96
									AxP	.42
									SxAxP	2.45*
									MSe=	.0176

Table 29 (cont.)

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
b. by father (student's opinion)										
high Per	3.58	3.61	3.67	3.62	3.42	3.65	3.42	3.50	Sex (S)	2.75
normal Per	3.42	3.56	3.50	3.49	3.50	3.60	3.42	3.51	Apt (A)	1.43
									Per (P)	4.15*
low Per	3.63	3.37	3.33	3.44	3.30	3.37	3.00	3.22	SxA	1.21
M	3.54	3.51	3.50	3.52	3.41	3.54	3.28	3.41	SxP	1.08
									AxP	.93
									SxAxP	.22
3. Frequency of punishment									MSe=	.0196
a. by mother (student's opinion)										
high Per	1.95	1.68	1.84	1.82	1.85	2.30	2.00	2.05	Sex (S)	.85
normal Per	1.74	1.95	1.79	1.82	1.90	1.90	1.74	1.85	Apt (A)	.76
									Per (P)	1.69
low Per	1.84	2.16	2.05	2.02	2.00	1.90	2.00	1.97	SxA	.13
M	1.84	1.93	1.89	1.89	1.92	2.03	1.91	1.95	SxP	1.37
									AxP	.19
									SxAxP	2.03
b. by mother (mother's opinion)									MSe=	.0225
high Per	1.56	1.63	2.00	1.73	1.47	1.50	1.53	1.50	Sex (S)	17.74**
normal Per	1.89	2.00	1.89	1.93	1.70	1.56	1.41	1.56	Apt (A)	.15
									Per(P)	1.15
low Per	1.79	1.84	1.81	1.81	1.53	1.53	1.57	1.54	SxA	.84
M	1.75	1.82	1.90	1.82	1.57	1.53	1.50	1.53	SxP	.38
									AxP	1.03
									SxAxP	.40
c. by father (student's opinion)									MSe=	.0216
high Per	1.95	1.95	1.72	1.87	1.84	1.80	1.70	1.78	Sex (S)	3.20
normal Per	1.84	2.05	1.79	1.89	1.90	2.10	1.58	1.86	Apt (A)	2.25
									Per (P)	.46
low Per	2.00	1.16	2.00	2.05	1.65	1.79	1.89	1.78	SxA	.03
M	1.93	2.05	1.84	1.94	1.80	1.90	1.72	1.81	SxP	.94
									AxP	1.03
									SxAxP	.46
									MSe=	.0254

Table 29 (cont.)

	Males low Apt	Males normal Apt	Males high Apt	Males M	Females low Apt	Females normal Apt	Females high Apt	Females M	F-ratios	
d. by father (father's opinion)										
high Per	1.61	1.74	1.71	1.69	1.40	1.18	1.65	1.41	Sex (S)	4.37*
normal Per	1.50	1.68	1.43	1.54	1.71	1.68	1.33	1.58	Apt (A)	1.08
									Per (P)	4.50*
low Per	1.65	2.12	1.87	1.88	1.47	1.67	1.89	1.68	SxA	1.82
M	1.59	1.85	1.67	1.70	1.53	1.51	1.63	1.56	SxP	1.80
									AxP	2.77*
									SxAxP	.73
									MSe=	.0223
4. Independence allowed before age of 12										
a. by mother (student's opinion)										
high Per	2.26	2.21	2.37	2.28	2.05	2.15	2.10	2.10	Sex (S)	.32
normal Per	1.79	2.32	2.32	2.14	1.85	2.40	2.65	2.30	Apt (A)	6.72**
									Per (P)	1.04
low Per	1.89	2.21	2.26	2.12	2.05	2.45	2.37	2.29	SxA	.08
M	1.98	2.25	2.32	2.18	1.98	2.33	2.37	2.23	SxP	1.75
									AxP	1.57
									SxAxP	1.57
									MSe=	.0338
b. by mother (mother's opinion)										
high Per	2.33	2.28	2.53	2.38	2.41	2.18	2.11	2.23	Sex (S)	.76
normal Per	2.11	2.06	2.05	2.07	1.95	2.26	2.29	2.17	Apt (A)	.02
									Per (P)	1.94
low Per	2.26	2.26	2.29	2.27	2.12	2.25	2.00	2.12	SxA	.51
M	2.23	2.20	2.29	2.24	2.16	2.23	2.13	2.17	SxP	1.14
									AxP	.54
									SxAxP	.99
									MSe=	.0268

Table 29 (cont.)

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
c. by father (student's opinion)										
high Per	2.26	2.21	2.56	2.34	2.00	2.15	2.05	2.07	Sex (S)	1.16
normal Per	2.05	2.32	2.33	2.23	1.75	2.40	2.70	2.28	Apt (A)	6.54**
									Per (P)	.17
low Per	2.00	2.42	2.44	2.29	2.05	2.42	2.22	2.23	SxA	.37
M	2.11	2.32	2.44	2.29	1.93	2.32	2.32	2.19	SxP	1.19
									AxP	1.13
									SxAxP	1.13
									MSe=	.0348
d. by father (father's opinion)										
high Per	2.39	2.26	2.59	2.42	2.47	2.28	2.30	2.35	Sex (S)	.51
normal Per	2.11	2.21	2.50	2.28	2.24	2.32	2.18	2.25	Apt (A)	.17
									Per (P)	1.27
low Per	2.35	2.59	2.40	2.45	2.44	2.33	2.33	2.37	SxA	1.30
M	2.29	2.36	2.50	2.38	2.38	2.31	2.27	2.32	SxP	.03
									AxP	.52
									SxAxP	.44
									MSe=	.0300
5. Independence allowed between 13 and 17										
a. by mother (student's opinion)										
high Per	3.16	3.28	3.05	3.16	3.00	2.95	2.90	2.95	Sex (S)	.56
normal Per	2.95	2.95	2.26	3.05	3.00	3.10	3.45	3.18	Apt (A)	4.40*
									Per (P)	.52
low Per	2.89	2.95	3.37	3.07	2.63	3.25	3.11	3.00	SxA	.49
M	3.00	3.06	3.23	3.10	2.88	3.10	3.15	3.04	SxP	2.06
									AxP	2.77*
									SxAxP	1.14
									MSe=	.0218

Table 29 (cont.)

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
b. by mother (mother's opinion)										
high Per	2.94	2.95	3.06	2.98	2.94	2.94	2.84	2.91	Sex (S)	2.89
normal Per	3.05	3.17	3.05	3.09	2.68	2.72	3.06	2.82	Apt (A)	.64
									Per (P)	1.28
low Per	2.79	2.79	2.94	2.84	2.82	2.81	2.85	2.83	SxA	.03
M	2.93	2.97	2.02	2.97	2.82	2.83	2.92	2.85	SxP	1.24
									AxP	.21
									SxAxP	.88
									MSe=	.0217
c. by father (student's opinion)										
high Per	3.01	3.32	3.24	3.22	2.95	2.95	2.95	2.95	Sex (S)	5.98*
normal Per	3.26	3.17	3.06	3.16	3.00	2.84	3.25	3.03	Apt (A)	.97
									Per (P)	.98
low Per	2.95	2.89	3.33	3.06	2.65	3.17	2.88	2.90	SxA	.14
M	3.11	3.12	3.21	3.15	2.87	2.99	3.02	2.96	SxP	.31
									AxP	.82
									SxAxP	2.20
									MSe=	.0265
d. by father (father's opinion)										
high Per	3.11	2.84	3.06	3.01	2.80	2.94	2.85	2.87	Sex (S)	.94
normal Per	2.72	2.84	3.21	2.93	2.71	2.79	3.06	2.85	Apt (A)	3.60*
									Per (P)	.14
low Per	2.76	2.88	3.07	2.91	2.81	2.93	3.00	2.92	SxA	.56
M	2.87	2.86	3.12	2.95	2.78	2.89	2.97	2.88	SxP	.38
									AxP	1.09
									SxAxP	.35
									MSe=	.0223

* $p < .05$

** $p < .01$

Table 30

Parental Child-Rearing (PARI) Factors as a Function of Aptitude (Apt), Performance (Per) ans Sex

	Males				Females				F-ratios	
1. Mothers' attitudes	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
a. fostering dependency										
high Per	5.41	4.83	4.53	4.93	5.12	4.73	5.32	5.06	Sex (S)	.37
normal Per	4.89	4.78	5.47	5.05	5.45	5.24	5.12	5.27	Apt (A)	2.32
low Per	5.21	4.44	5.00	4.88	5.73	4.40	4.64	4.93	Per (P)	.48
M	5.17	4.69	5.00	4.95	5.43	4.79	5.03	5.08	SxA	.11
									SxP	.06
									AxP	.60
									SxAxP	.89
									MSe=	.2064
b. feelings of martyrdom										
high Per	4.24	4.56	3.73	4.17	5.06	4.87	4.37	4.76	Sex (S)	.01
normal Per	5.72	3.89	4.82	4.81	4.45	4.76	3.94	4.38	Apt (A)	2.87
low Per	4.84	4.11	4.25	4.40	4.40	3.93	4.21	4.18	Per (P)	.78
M	4.93	4.19	4.27	4.46	4.64	4.52	4.17	4.44	SxA	.87
									SxP	2.39
									AxP	.79
									SxAxP	1.53
									MSe=	.1811
c. ascendancy										
high Per	7.47	6.11	6.00	6.53	7.24	7.40	6.21	6.95	Sex (S)	.85
normal Per	6.72	6.06	6.12	6.30	7.05	6.29	5.87	6.41	Apt (A)	3.39*
low Per	6.28	5.72	6.37	6.12	6.40	6.33	6.07	6.27	Per (P)	1.76
M	6.82	5.96	6.16	6.32	6.90	6.68	6.05	6.54	SxA	1.06
									SxP	.17
									AxP	.70
									SxAxP	.33
									MSe=	.265
d. overpossessiveness										
high Per	13.12	13.33	10.73	12.29	14.00	13.33	13.11	13.48	Sex (S)	.11
normal Per	15.00	11.73	13.29	13.34	13.55	13.65	12.31	13.17	Apt (A)	3.87*
low Per	13.74	11.83	13.00	12.86	13.53	11.47	12.14	12.38	Per (P)	.68
M	13.95	12.30	12.34	12.86	13.69	12.82	12.52	13.01	SxA	.25
									SxP	1.11
									AxP	.85
									SxAxP	1.21
									MSe=	.9197

Table 30 (cont.)

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
e. authoritarian control										
high Per	25.82	25.94	21.27	24.34	26.24	24.73	25.00	25.32	Sex (S)	.04
normal Per	29.11	22.78	26.35	26.08	26.10	25.76	24.19	25.35	Apt (A)	4.83*
									Per (P)	1.89
low Per	26.32	22.44	24.25	24.34	25.07	22.47	23.36	23.63	SxA	.63
M	27.08	23.72	23.96	24.82	25.80	24.32	24.18	24.76	SxP	.60
									AxP	.89
									SxAxP	1.50
									MSe=	2.38
f. hostility-rejection										
high Per	7.47	7.44	7.53	7.48	7.88	7.07	7.74	7.56	Sex (S)	.11
normal Per	7.44	7.00	7.47	7.31	6.85	7.18	7.25	7.09	Apt (A)	.55
									Per (P)	.56
low Per	7.47	7.50	6.62	7.20	7.53	6.93	8.29	7.58	SxA	.92
M	7.46	7.31	7.21	7.33	7.42	7.06	7.76	7.41	SxP	.47
									AxP	.07
									SxAxP	.99
									MSe=	.2821
2. Fathers' attitudes										
a. harsh punitive control										
high Per	13.59	12.65	10.62	12.29	12.93	13.11	12.05	12.80	Sex (S)	1.17
normal Per	13.00	11.24	12.42	12.22	12.58	11.59	11.19	11.78	Apt (A)	2.36
									Per (P)	.68
low Per	13.06	12.94	12.67	12.89	11.14	12.23	11.33	11.57	SxA	.74
M	13.22	12.27	11.90	12.46	12.22	12.41	11.52	12.05	SxP	1.92
									AxP	1.42
									SxAxP	.44
									MSe=	.6545
b. suppression of emotion										
high Per	9.35	8.94	8.50	8.93	9.27	9.53	9.00	9.26	Sex (S)	.00
normal Per	9.19	7.94	9.42	8.85	8.95	9.12	8.56	8.88	Apt (A)	.28
									Per (P)	1.09
low Per	9.19	9.15	9.53	9.49	9.43	9.08	9.00	9.17	SxA	.55
M	9.24	8.88	9.15	9.09	9.21	9.24	8.85	9.10	SxP	.54
									AxP	.47
									SxAxP	.94
									MSe=	.3003

Table 30 (cont)

c. inter-personal distance	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
high Per	8.06	6.94	7.56	7.52	7.80	7.29	7.26	7.45	Sex (S)	.02
normal Per	7.75	7.24	7.58	7.52	7.42	8.18	7.12	7.57	Apt (A)	.39
									Per (P)	.27
low Per	7.94	7.44	7.47	7.62	7.07	7.64	8.44	7.78	SxA	1.98
M	7.92	7.20	7.54	7.55	7.43	7.70	7.61	7.58	SxP	.06
									AxP	1.23
									SxAxP	1.17
									MSe=	.1849

* $p < .05$
** $p < .01$

Evidence that high performing students believed that the punishment given them by their parents was fair does not necessarily contradict the general hypothesis suggested in this section. Conceivably students who believe the punishment they have received to be fair have accepted the standards of evaluation set up by their parents, and consequently perform better for reasons discussed previously. The fact that fathers reported punishing high performers less frequently could also be interpreted in this manner.

Aptitude differences in independence have been discussed previously (p. 20). It would be tempting to interpret the negative relationship between maternal authoritarianism and aptitude as an indication that authoritarian, punitive child rearing stifles the development of intellectual abilities. This conclusion would probably be unwarranted, however. The relationship between maternal authoritarianism in child-rearing and Apt is most likely a result of the common relationship of both to mothers' education level (Table 19, also see discussion, p. 84).

5. Miscellaneous Factors

Information was obtained on several variables that were not directly relevant to either of the two theoretical issues considered during this phase of the study, but which were felt to be of general interest.

Information was obtained from students concerning their expectancies for the college atmosphere, how religious they expected other students to be, and their similarity to other students in goals and values. Opinions concerning the latter variable were also obtained from parents. Other measures were obtained from students concerning their certainty of choice of major, the relative importance they attached to effort (as opposed to intelligence) in getting good grades, their resentment at having to take courses not essential to their goals, and test anxiety. Measures from parents included birth order of the child attending college and the primary factors in getting good grades. These data are presented in Table 31. The following results attained significance:

Sex

1. Fathers of males expected their children's goals and values to be more similar to those of other students than did fathers of females (Table 31-3c).
2. Females reported going to college more to please their parents than did males (Table 31-5).
3. Males reported more resentment at having to take unessential courses than did females (Table 31-7).
4. Females acknowledged greater test anxiety than did males (Table 31-8).

Aptitude

1. Low-Apt students expected the college atmosphere to be less social (i.e., more academic) than did higher-Apt students (Table 31-1).
2. Low-Apt students expected other students to be more religious than students high in Apt (Table 31-2).
3. Low-Apt students expected the goals and values of other students to be more similar to their own than did normal-Apt or high-Apt students (Table 31-3a).
4. Fathers of high-Apt females expected them to be less similar to other students in goals and values, while fathers of high-Apt males expected them to be relatively more similar to other students in goals and values (Table 31-3c).
5. The importance attached to effort in getting good grades was related negatively to Apt (Table 31-4a).
6. Low-Apt females and normal-Apt males reported greater certainty of their choice of major than did students at other levels of sex and Apt (Table 31-6).
7. Test anxiety was related negatively to Apt (Table 31-8).

Table 31

Miscellaneous Variables as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
1. Student's expectancy for college atmosphere to be social										
high Per	3.47	3.32	3.11	3.30	3.40	3.30	3.00	3.23	Sex (S)	1.43
normal Per	3.37	3.11	3.32	3.26	3.30	3.20	3.05	3.18	Apt (A)	3.46*
low Per	3.32	3.11	3.37	3.26	3.30	3.05	3.15	3.17	Per (P)	.22
M	3.39	3.18	3.30	3.27	3.33	3.18	3.07	3.19	SxA	.81
									SxP	.02
									AxP	1.33
									SxAxP	.16
									MSe=	.0204
2. Student's expectancy for other students to be religious										
high Per	2.79	2.68	2.63	2.70	2.75	2.50	2.55	2.60	Sex (S)	2.84
normal Per	2.63	2.42	2.56	2.54	2.85	2.55	2.65	2.68	Apt (A)	6.81**
low Per	2.63	2.47	2.42	2.51	2.90	2.50	2.80	2.73	Per (P)	.21
M	2.68	2.53	2.70	2.58	2.83	2.52	2.67	2.67	SxA	.88
									SxP	3.40*
									AxP	.21
									SxAxP	.38
									MSe=	.0128
3. Similarity in goals between student & others in college										
a. student's expectancy										
high Per	3.37	2.89	3.16	3.14	3.15	3.00	3.15	3.10	Sex(S)	.42
normal Per	3.32	3.11	3.11	3.18	3.35	3.35	3.05	3.25	Apt (A)	6.35**
low Per	3.68	3.26	3.05	3.33	3.30	3.25	2.95	3.17	Per (P)	1.29
M	3.46	3.09	3.11	3.22	3.27	3.20	3.05	3.17	SxA	1.65
									SxP	1.05
									AxP	1.72
									SxAxP	.24
									MSe=	.0208
b. mother's expectancy										
high Per	3.73	3.40	3.72	3.62	3.47	3.31	3.35	3.38	Sex (S)	1.21
normal Per	3.59	3.38	3.50	3.49	3.68	3.58	3.68	3.55	Apt (A)	1.33
low Per	3.43	3.53	3.56	3.51	3.53	3.38	3.45	3.45	Per (P)	.09
M	3.58	3.43	3.59	3.54	3.59	3.42	3.39	3.46	SxA	.71
									SxP	1.48
									AxP	.54
									SxAxP	.35
									MSe=	.0235

Table 31 (cont)

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
c. father's expectancy										
high Per	3.67	3.38	3.57	3.54	3.40	3.29	3.06	3.25	Sex (S)	7.11**
normal Per	3.53	3.53	3.57	3.54	3.33	3.42	3.43	3.39	Apt (A) Per (P)	1.55 .37
low Per	3.50	3.20	3.86	3.52	3.67	3.33	3.11	3.37	SxA	3.55*
M	3.57	3.37	3.67	3.56	3.47	3.35	3.20	3.34	SxP AxP SxAxP	.39 .96 1.50
4. Importance of effort in getting good grades									MSe=	.0242
a. student's opinion										
high Per	3.21	3.26	3.16	3.21	3.55	3.10	3.05	3.23	Sex (S)	.05
normal Per	3.58	3.47	3.32	3.46	3.45	3.16	3.35	3.32	Apt (A) Per (P)	6.16** 2.40
low Per	3.42	3.32	3.00	3.25	3.45	3.30	3.20	3.32	SxA	1.48
M	3.41	3.35	3.16	3.30	3.48	3.19	3.20	3.29	SxP AxP SxAxP	1.01 .39 .96
b. mother's opinion									MSe=	.0176
high Per	3.00	3.00	2.84	2.95	3.29	3.17	2.74	3.07	Sex (S)	.12
normal Per	2.74	3.05	3.11	3.00	3.20	2.84	2.65	2.90	Apt (A) Per (P)	2.61 2.16
low Per	3.11	2168	2.88	2.89	2.76	2.82	2.71	2.77	SxA	2.65
M	2.95	2.91	2.94	2.94	3.09	2.94	2.70	2.91	SxP AxP SxAXP	1.09 .86 2.39*
c. father's opinion									MSe=	.0221
high Per	3.00	2.78	3.12	2.96	3.13	3.00	2.85	2.99	Sex (S)	.02
normal Per	3.00	3.21	2.64	2.95	3.00	2.95	2.76	2.90	Apt (A) Per (P)	1.71 .45
low Per	3.18	2.94	2.93	3.02	2.94	3.06	3.00	3.00	SxA	.08
M	3.06	2.98	2.90	2.98	3.02	3.00	2.87	2.97	SxP AxP SxAxP MSe=	.10 1.35 1.59 .0223

Table 31 (cont)

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
5. Degree to which student is attending college to please parents										
high Per	2.05	2.00	1.84	1.96	2.00	2.21	1.90	2.04	Sex (S)	8.87**
normal Per	2.05	1.68	2.16	1.96	2.25	2.35	2.65	2.42	Apt (A)	.14
									Per (P)	2.44
low Per	2.05	2.26	1.95	2.09	2.60	2.15	2.35	2.37	SxA	.08
M	2.05	1.98	1.98	2.01	2.28	2.24	2.30	2.27	SxP	1.49
									AxP	1.61
									SxAxP	1.29
6. Student's certainty of choice of major									MSe=	.0363
high Per	2.28	3.11	3.00	2.93	2.90	2.80	2.60	2.77	Sex (S)	1.41
normal Per	2.95	2.84	2.53	2.77	3.10	2.70	2.20	2.67	Apt (A)	1.33
									Per (P)	1.06
low Per	2.47	3.00	2.68	2.72	3.00	2.00	2.85	2.62	SxA	4.78*
M	2.70	2.98	2.74	2.81	3.00	2.50	2.55	2.68	SxP	.04
									AxP	2.22
									SxAxP	1.74
7. Student's resentment at having to take courses unessential to goals									MSe=	.0487
high Per	2.58	2.53	2.79	2.63	2.70	2.70	2.20	2.53	Sex (S)	4.64*
normal Per	2.37	2.89	2.68	2.65	2.05	2.15	2.60	2.27	Apt (A)	.07
									Per (P)	.57
low Per	3.11	2.58	2.63	2.76	2.60	2.55	2.20	2.45	SxA	.17
M	2.68	2.67	2.70	2.68	2.45	2.47	2.33	2.42	SxP	.48
									AxP	1.48
									SxAxP	1.21
8. Test anxiety									MSe=	.0694
high Per	30.9	26.6	25.2	27.5	34.6	28.0	25.3	29.3	Sex (S)	10.69**
normal Per	27.8	28.2	23.4	26.5	34.6	31.8	28.3	31.5	Apt (A)	10.48**
									Per (P)	.93
low Per	27.9	25.6	22.4	25.3	32.6	27.5	27.4	29.2	SxA	.54
M	28.9	26.7	23.6	26.4	33.9	29.0	27.0	30.0	SxP	.78
									AxP	.50
									SxAxP	.14
									MSe=	5.33

Table 31 (cont)

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
9. Birth order										
high Per	1.72	1.76	1.68	1.72	2.12	1.56	1.58	1.75	Sex (S)	2.02
									Apt (A)	.69
normal Per	1.47	1.47	1.74	1.56	1.90	1.79	1.71	1.80	Per (P)	.81
low Per	1.84	1.84	1.59	1.76	1.88	1.94	1.86	1.89	SxA	.68
									SxP	.42
M	1.68	1.69	1.67	1.68	1.97	1.76	1.71	1.81	AxP	.55
									SxAxP	.77
10. Number of children in family									MSe=	.0396
high Per	2.67	2.78	2.84	2.76	3.00	2.72	2.42	2.71	Sex (S)	.11
									Apt (A)	1.81
normal Per	3.42	2.95	2.84	3.07	3.20	2.32	2.71	2.74	Per (P)	1.69
low Per	3.11	3.11	2.59	2.93	3.12	3.12	3.29	3.17	SxA	.41
									SxP	1.39
M	3.06	2.94	2.76	2.92	3.11	2.71	2.80	2.88	AxP	.78
									SxAxP	.84
									MSe=	.0880

* $p < .05$
** $p < .01$

Performance

1. The degree to which females expected other students to be religious was related negatively to Per; the degree to which males expected other students to be religious was related positively to Per (Table 31-2).

Discussion

Significant sex differences detected were not surprising. The greater resentment of males to taking unessential courses could be due to their greater vocational goal orientation (Table 18-3). The finding that females feel they are going to college relatively more to please their parents is consistent with the finding that they believed college to be relatively less important to them than did males (Table 18-1). That females reported greater test anxiety than did males may be attributable to a tendency of females to acknowledge self-derogatory characteristics. Anxiety may be considered by males to be a sign of weakness and incompetence, and therefore inconsistent with the dominant social role to which they aspire: they may therefore tend to avoid admitting this characteristic.

Aptitude differences in expectancies pertaining to the college environment are of somewhat greater interest. Low-Apt students expected other college students to be relatively more religious, more academically oriented, and also more similar to themselves in values and goals. Alternatively, high-Apt students expected others to be less religious, more socially oriented, but less similar to themselves in goals and values. If "similarity in goals and values" is assumed to encompass both academic and religious values, these findings in conjunction suggest that both low-Apt and high-Apt students believe themselves to have academic values and to be religious, but differ only in the degree to which they expect others in the college environment to share these values. Unfortunately an index of students' values toward religion was not obtained during this phase of study. However, the finding that students at different levels of aptitude are similar in the degree to which they acknowledged attending college for intellectual vs. social broadening (Table 18-2) would be consistent with this interpretation.

High-Apt females were expected by their fathers to be relatively dissimilar to other students in attitudes and beliefs while high-Apt males were expected to be relatively similar to other students. Fathers of high-Apt females may see them as not adopting the accepted female social role (see p. 24), and therefore expect them to be dissimilar to other females.

The negative relationship between Apt and the importance attached to effort in attaining good grades is not surprising. Low-Apt students, who presumably have had to depend more upon effort for attaining academic goals in the past, may be more aware of the relevance of effort in attaining these goals than high-Apt students, who have not had to work as hard in order to perform well academically.

Evidence that test anxiety was related negatively to Apt but was unrelated to Per is possibly the most noteworthy finding reported in this section. While persons with high general intellectual ability reported less anxiety associated with intellectual goal-seeking activities, academic performance measured independently of these skills appears not to be affected by anxiety. The negative relationship between aptitude and test anxiety could have two interpretations. It could indicate that anxiety is detrimental to performance on the tests used to measure aptitude in this study. If this were true, however, it is surprising that anxiety was not also related negatively to academic performance, which also involves test-taking. A second interpretation is that anxiety is a result rather than a cause of inadequacies in general intellectual skills relevant to performance. If this interpretation is correct, relationships found between academic performance and anxiety (Lavin, 1965, pp. 83-88) may be due only to the common relationship of both to general intellectual ability, and may not indicate that anxiety, at least as acknowledged on questionnaires, is detrimental to performance. The finding that performance, varied independently of aptitude, was unrelated to anxiety supports this view. At least this latter finding suggests that the common assumption that academic performance is decreased by test anxiety may be unwarranted.

The one significant finding involving performance was of heuristic interest. High-Per males expected other college students to be more religious than did lower performers, while high-Per females expected other students to be relatively less religious. If expectancies concerning others' values are in part projections of their own values, these data would suggest that desire for academic goals is greater among religious males but less among religious females. In the third stage of the research more direct support for this interpretation was found (p.138). Religion may accent the traditional social roles ascribed to males and females; that is, it may encourage vocational success and personal achievement among men while emphasizing the importance of being a good housewife and mother among women.

CHAPTER IV

PHASE IIIA: CLARIFICATION OF MOTIVATIONAL AND ATTITUDINAL EFFECTS UPON PERFORMANCE

1. Introduction

The research during the third phase of the study was performed at the University of Illinois at Chicago Circle, and was concerned primarily with clarifying and expanding upon results obtained during the first two phases. The research presented in the first section of this chapter attempted to clarify motivational and attitudinal effects upon academic performance. Later sections are devoted to tests of hypotheses concerning alienation and conflict, and to miscellaneous variables paralleling certain of those used during Phase 2.

The prediction of academic effectiveness from the motivational indexes used during the first two phases led to inconclusive and often uninterpretable results. It was therefore necessary to deal more systematically with the effect upon academic performance of the desire to attain goals deemed important to subjects, and the degree to which good grades were believed to facilitate the attainment of these goals. Furthermore, it seemed possible that the inconsistent results obtained in the first two phases could be attributed to inadequate indexes of the motives and values of students and their parents. During this phase different, more refined instruments were used to measure parents' and students' values.

Possible differences should be noted between the sample of subjects used during this phase of the study and those used in earlier phases. The earlier sample was composed primarily of students with generally nonurban, middle class backgrounds, nearly all of whom lived in campus housing away from home. The University of Illinois sample consisted almost entirely of students from an urban, lower middle class home environment who lived at home and commuted to college. The effect of parents' attitudes and behavior upon their children's performance might therefore be expected to be greater in the second sample. Furthermore, the values and goals of these students might also be expected to differ from those of the Colorado sample.

2. Selection of Subjects

Before registering for college, 1,850 entering freshmen were administered questionnaires designed to obtain information concerning their values and goals. By obtaining data at this time, it was insured that students' values were not consequents of their college performance. From these students, 180 males and 180 females were selected at each of nine combinations of aptitude and performance in the manner described below.

Academic aptitude (Apt) was measured by composite American College Testing Service college entrance examination score. This index, like the SAT, was interpreted as a measure of the degree to which each student had developed general academic skills, and therefore as an estimate of how well he should perform in college with an average amount of effort. Academic performance(Per) was measured by first term grade point average. Apt and Per for each student were converted to standard scores, and students divided into nine combinations of these variables according to the criteria shown in Table 32. About 20 representatives of each combination of Apt, Per and sex were selected; the mean aptitude and performance of these students are shown in Table 33. This procedure allowed the relationship of Apt and Per to dependent variables to be determined independently in the manner used during earlier phases.

3. Relevance of Academic Achievement-Related Behavior to Primary Goal Attainment

The interpretation of data in earlier phases was based upon two implicit assumptions. First, it was assumed that the value of academic performance to the student is largely instrumental; that is, good grades are sought to the extent that they are believed to facilitate the attainment of more primary goals. A second, more tenuous assumption was that males, since they are typically encouraged to occupy an achievement-oriented social role, perceive good grades as primarily instrumental in attaining achievement goals, but believe that active pursuit of academic goals would interfere with social goal attainment; their performance was therefore expected to be correlated positively with variables indicating a desire for achievement goals, but to be related negatively to social motivational variables. On the other hand, it was assumed that females would see academic performance as having its greatest value in facilitating social goal attainment; if this were true, academic performance among females should be related positively to variables reflecting high social motivation.

While the results of the earlier study generally were consistent with these assumptions, they were not sufficiently strong to insure that the second assumption did not represent too general a view of sex differences in motivation and its consequent effects upon academic effectiveness. In this phase of the research, the motivational antecedents of academic performance were investigated more systematically using a procedure that would test the validity of this assumption.

In general, this procedure involved determining which of a set of goals each subject considered to be of greatest importance to him, and then measuring the extent to which the subject believed that behavior assumed to facilitate high academic performance would aid or interfere with the attainment of this goal. The extent to which behavior detrimental to performance was believed to affect primary goal attainment was also determined. These measures, which were obtained from each student before he entered college, were related to first-term grade point average after eliminating the effects of academic aptitude.

Students were expected to perform well in college either if they believed that good grades, and behavior directed toward attaining good grades, facilitated the attainment of goals of primary importance to them, or if they believed that behavior interfering with academic performance would be detrimental to primary goal attainment. Alternatively, students were expected not to perform well either if they believed that academic achievement-related activity would interfere with their primary goal attainment, or if they believed that behavior interfering with attainment of good grades would facilitate the attainment of primary goals. These hypotheses, if supported, would have implications for possible sex differences in the motivational factors underlying academic performance. For example, if males and

Table 32

Criteria for Selecting Subjects - Phase III A

	Aptitude (Apt)		
Performance (Per)	low Apt	normal Apt	high Apt
high Per	$Apt < -.50$[a] $Per > +.50$ $D > 1.50$[b]	$-.30 < Apt < +.30$ $Per > +.50$ $+.50 < D < +1.25$	$Apt > +.50$ $Per > +.50$ $-.30 < D < +.30$
normal Per	$Apt < -.50$ $-.30 < Per < +.30$ $+.50 < D < 1.25$	$-.30 < Apt < +.30$ $-.30 < Per < +.30$ $-.30 < D < +.30$	$Apt > +.50$ $-.30 < Per < +.30$ $-1.25 < D < -.50$
low Per	$Apt < -.50$ $Per < -.50$ $-.30 < D < +.30$	$-.30 < Apt < +.30$ $Per < -.50$ $-1.25 < D < -.50$	$Apt > +.50$ $Per < -.50$ $D < -1.50$

[a] Apt and Per are given in units of standard deviation from the mean

[b] $D = Per - Apt$

Table 33

Mean Aptitude (Apt), Performance (Per)
And Difference Between Academic Variables (D)

		Males			Females		
		low Apt	normal Apt	high Apt	low Apt	normal Apt	high Apt
high Per	Apt	-1.54	-.09	+ .93	-1.19	-.12	.87
	Per	.80	.72	+ .98	1.04	.89	.93
	D	2.34	.81	+ .05	2.23	1.01	.06
	N	19	19	20	19	21	20
normal Per	Apt	- .99	-.12	+ .81	-1.04	-.23	.81
	Per	.04	-.14	- .11	.03	-.09	- .09
	D	1.03	-.02	- .92	1.07	.14	- .90
	N	21	22	20	20	22	20
low Per	Apt	-1.04	-.09	+ .79	-1.13	-.05	.73
	Per	-1.01	-.89	-1.28	-1.05	-.93	-1.34
	D	.03	-.80	-2.07	.08	-.88	-2.07
	N	20	21	21	20	22	19

females differ in the manner described earlier, then males should attach more importance to vocational success, and should perceive academic achievement-related behavior to be more relevant to the attainment of this goal, than should females; on the other hand, females should attach relatively greater importance to social goals (e.g., a successful marriage and family life, popularity, etc.) and should believe academic achievement to be more instrumental to the attainment of these goals than should males. The belief that academic achievement-related activity is relevant to primary goal attainment should be related to performance among both males and females; however, the belief that this activity affects vocational success should be related to performance among males but not among females, while the belief that this activity affects the likelihood of a successful marriage and family life should be related to performance among females but not among males.

Measurement of Dependent Variables

Five goals were selected that were expected to be important to college students. They were: vocational success (getting a good job); being popular with friends around home (those outside the college environment); being well thought of by one's parents; having a successful marriage and family life; and being popular with other college students. Each subject was asked to estimate, on an eleven-point scale ranging from 0 (extremely unimportant) to 10 (extremely important) how important he personally believed each goal to be, and also to rank the five goals in the order of their importance to him. The form used to obtain these data is presented in Appendix II, Part III.

Subjects were then asked to estimate the degree to which each of twenty behavioral traits would aid or interfere with the attainment of each of the five goals, using a seven-point scale ranging from -3 (would interfere extremely with attaining the goal) to +3 (would be extremely helpful in attaining the goal). The twenty behavioral characteristics rated in this manner included several items from a scale constructed by Scott (1965) to assess the value attached to academic achievement; others were taken from the Liverant (1958) Goal Preference Inventory. The following ten items were assumed to describe behavior that would facilitate high academic performance, or would indicate a tendency to pursue academic goals:

1. Achieving academic honors and public recognition for academic performance.
2. Getting as good grades in school as possible.
3. Competing with friends for high academic performance.
4. Sticking to tasks until they are completed.
5. Trying to do well in everything one undertakes.
6. Having an active interest in all things scholarly.
7. Striving to gain new knowledge about the world.
8. Studying more than is required to attain a good grade.
9. Studying on weekends.
10. Being recognized as an expert in intellectual arguments.

The following ten items were assumed to reflect behaviors that would be detrimental to academic performance, or would prevent the active pursuit of academic goals:

1. Being satisfied with average or below average grades.
2. Taking snap courses that don't require work.
3. Not doing well in one's course work.
4. Trying not to appear too smart in front of others.
5. Going out on as many dates as possible.
6. Participating in social activities whenever one is asked.
7. Doing everything one can to support actively all organizations to which one belongs.
8. Trying to get by in school with as little work as possible.
9. Going along with others even when one feels it is not in his best interest.
10. Working to become recognized as a leader in non-academic activities.

Items pertaining to performance-facilitating behavior and those pertaining to performance-interfering behavior were arranged alternately on the questionnaire form administered (Appendix H, Part III).

Each subject's estimates of the effects of the ten performance-facilitating behaviors upon the attainment of the goal he ranked highest in importance were summed to provide a measure of the degree to which he judged this type of behavior to facilitate or interfere with his attainment of this goal. Similarly, his estimates of the effects of the ten behaviors assumed to interfere with high performance were summed to provide a measure of the degree to which he judged this type of behavior to facilitate or interfere with primary goal attainment. Similar measures were obtained with regard to the goal each subject ranked second in importance, and also with regard to each of the five goals considered independently of their importance.

Results

Subjects' estimates of the effect of performance-facilitating behavior upon attaining the goal they deemed most important, and also their estimates of the effect of performance-interfering behavior upon the attainment of this goal, are shown in Table 34 as a function of aptitude (Apt), performance, (Per) and sex. Similar results regarding the goal they ranked second in importance are also shown.

Analyses of varience indicated that neither the estimated effect of performance-facilitating behavior upon the goal ranked first in importance nor the effect of this type of behavior upon the goal ranked second in importance was related to Per. However, low-Per subjects judged performance-interfering behavior to be less detrimental to the attainment of their primary goals ($\bar{x} = 1.59$) than did either normal-Per ($\bar{x} = -3.32$) or high-Per ($\bar{x} = -2.44$) subjects. A similar relationship approached significance ($p < .10$) in analyses involving goals ranked second in importance. Subsequent analyses involving the effect of this behavior on the attainment of goals ranked lower than second in importance showed no sign of a similar relationship. No main or interactive relationships involving either Apt or sex were significant in any of the latter six analyses.

Table 34

Variables Pertaining to Most Important Goal and Second-ranked Goal as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1. Most important goal										
a. Performance-facilitating behavior										
high Per	17.58	17.42	19.29	18.09	15.61	17.35	16.95	16.63	Sex (S)	1.51
									Apt (A)	.85
normal Per	17.30	17.36	18.73	17.79	18.47	15.57	15.95	16.66	Per (P)	.55
low Per	14.70	20.81	18.81	18.10	18.37	16.68	19.16	18.07	SxA	1.68
									SxP	.36
M	16.52	18.53	18.94	17.99	17.48	16.53	17.35	17.12	AxP	.84
									SxA_xP	1.45
									MSe=	2.30
b. Performance-interfering behavior										
high Per	-2.58	-2.32	-4.29	-3.06	-2.67	-2.10	- .70	-1.82	Sex (S)	.02
									Apt(A)	2.03
normal Per	-2.95	-2.18	-4.00	-3.04	-3.68	-3.24	-3.85	-3.59	Per (P)	3.27*
low Per	.95	-1.43	-2.90	-1.12	- .47	-2.14	-3.53	-2.04	SxA	1.03
									SxP	1.45
M	-1.52	-1.97	-3.73	-2.41	-2.27	-2.49	-2.69	-2.48	AxP	1.48
									SxAxP	.35
									MSe=	1.38
2. Second-ranked goal										
a. Performance-facilitating behavior										
high Per	13.95	13.89	14.12	13.99	15.83	16.50	14.75	15.69	Sex (S)	.13
normal Per	17.65	16.68	14.86	16.40	14.05	17.24	17.60	16.30	Apt (A)	.53
									Per(P)	1.23
low Per	13.60	16.29	18.71	16.20	16.21	16.64	13.47	15.44	SxA	.43
M	15.07	15.62	15.90	15.53	15.36	16.79	15.27	15.81	SxP	.86
									AxP	.13
									SxAxP	2.22
									MSe=	2.85
b. Performance-interfering behavior										
high Per	-2.00	-1.21	- .21	-1.14	-3.83	-1.05	.50	-1.46	Sex (S)	.27
									Apt (A)	.13
normal Per	-2.85	-1.73	-2.05	-2.21	-1.00	-2.62	-3.05	-2.22	Per (P)	2.37
low Per	.95	.90	-2.29	- .15	- .63	-1.77	- .05	- .82	SxA	.64
M	-1.30	- .68	-1.52	-1.17	-1.82	-1.81	- .87	-1.50	SxP	.09
									AxP	1.46
									SxAxP	1.13
									MSe=	1.91

* $p < .05$

** $p < .01$

These results therefore give only partial support to the two major hypotheses tested. As expected, low performers believed that behavior assumed to interfere with academic goal-seeking would have a less detrimental effect upon primary goal attainment than did higher performers. However, contrary to expectations, the degree to which behavior assumed to facilitate getting good grades was judged to aid in primary goal attainment was not related to Per.

It is noteworthy that the results of analyses pertaining to goals of less than primary importance were not significant. It seems reasonable to conclude that when goals are not of primary importance, the perceived effect of academic performance-related activity upon their attainment is not a major motivating factor underlying academic effectiveness.

Supplementary Analyses

To insure against a misinterpretation of the results described above, and also to provide the information necessary to clarify earlier research concerning sex differences in motivational correlates of performance, two sets of supplementary analyses were performed.

It was unclear from the data shown in Table 34 whether subjects at each combination of Apt and Per selected similar goals as most important. If this were not the case, it could legitimately be argued thata subject's performance was affected by the type of goals he deemed important rather than the perceived relevance of performance-related behavior to the attainment of these goals. To evaluate the plausibility of this interpretation, the importance of each of the five goals considered in this study, as they were judged along the eleven-point scales described earlier, was determined as a function of Apt, Per and sex. These data are presented in Table 35. Analyses of variance performed separately on each set of data yielded no significant effects involving either Apt or Per. However, three significant sex differences occurred. Males believed vocational success to be more important than did females but attached less importance than did females both to a successful marriage and family life and to being well thought of by parents.

Since in no case was the importance attached to a particular goal related to performance, the results in Table 34 appear due primarily to the relevance of performance-related activity to the attainment of primary goals and not merely to differences in the type of goal sought by students at different levels of performance.

Data in Table 35 are of additional interest since they indicate that although males and females differed as expected in the importance attached to vocational success and marital happiness, respectively, the importance attached to these goals was not related to performance among students of either sex. The assumption made in earlier phases that males are typically inspired to perform well by a desire for vocational goals while females are inspired to perform well by a desire for social goals, is therefore not supported by these data.

Another assumption of previous research was that males see academic performance-related behavior as more relevant to vocational goal attainment than do females, while females believe this behavior to be more relevant to

Table 35

Importance of Goals as a Function of

Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
1. Vocational success										
high Per	8.68	8.37	7.85	8.30	7.47	8.10	7.55	7.71	Sex (S)	8.09
normal Per	8.38	8.32	8.60	8.43	7.40	8.45	7.80	7.88	Apt (A) Per (P)	1.82 .57
low Per	8.15	8.14	8.48	8.26	8.30	8.18	6.79	7.76	SxA	2.08
M	8.40	8.28	8.31	8.33	7.72	8.24	7.38	7.78	SxP AxP	.06 .52
									SxAxP	1.69
									MSe=	.15
2. Popularity with friends at home										
high Per	7.11	7.26	6.85	7.07	6.53	7.00	6.35	6.63	Sex (S)	2.15
normal Per	6.81	6.73	7.30	6.95	7.20	6.50	7.30	7.00	Apt (A) Per (P)	.30 .97
low Per	7.05	6.76	7.10	6.97	6.75	7.14	5.53	6.47	SxA	.97
M	6.99	6.92	7.08	7.00	6.83	6.88	6.39	6.70	SxP AxP	.76 1.57
									SxAxP	1.00
									MSe=	.18
3. Being well thought of by parents										
high Per	8.47	8.05	7.95	8.16	8.53	9.48	8.50	8.84	Sex (S)	7.12
normal Per	9.00	8.45	7.80	8.42	9.20	9.27	9.35	9.27	Apt (A) Per (P)	1.42 1.96
low Per	7.75	8.71	8.71	8.39	8.60	8.68	7.95	8.41	SxA	.34
M	8.41	8.40	8.15	8.32	8.78	9.14	8.60	8.84	SxP AxP	1.74 .56
									SxAxP	2.20
									MSe=	.17

Table 35 (cont)

	Males				Females				F-ratios	
4. Successful marriage and family life	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Per	M		
high Per	8.32	9.42	8.85	8.86	9.58	9.05	9.50	9.38	Sex (S)	5.78
normal Per	8.90	8.95	8.65	8.83	9.35	8.77	9.80	9.31	Apt (A) Per (P)	.44 .36
low Per	8.20	8.57	9.29	8.69	9.20	9.41	8.84	9.15	SxA	1.36
M	8.47	8.98	8.93	8.79	9.38	9.08	9.38	9.28	SxP AxP SxAxP MSe=	.01 .30 1.73 .18
5. Popularity with other college students										
high Per	7.16	7.21	7.05	7.14	7.32	7.52	6.75	7.20	Sex (S)	.17
normal Per	6.95	7.09	6.90	6.98	7.60	7.14	7.40	7.38	Apt (A) Per (P)	.66 .45
low Per	6.85	7.76	7.81	7.47	7.35	7.55	6.84	7.25	SxA	1.18
M	6.99	7.35	7.25	7.20	7.42	7.40	7.00	7.28	SxP AxP SxAxP MSe=	.96 .61 .62 .15

* $p < .05$
** $p < .01$

social goal attainment than do males. To test the validity of this assumption, subjects' estimates of the effects of performance-relevant behavior upon the attainment of each of the five goals considered were calculated in a manner similar to that used in determining the relevance of this behavior to the attainment of the goal ranked first in importance. These data, as a function of Apt, Per and sex, are shown in Table 36. Analyses of these data indicated that females believed performance-facilitating behavior to aid more in having a successful marriage and family life than did males. No other relationships involving either Apt or sex were significant. The estimated effect of performance-facilitating behavior upon the attainment of a particular goal was not related positively to Per in any instance. In fact, in some cases the relationship was nonsignificantly negative. However, low-Per subjects, relative to subjects at higher performance levels, estimated performance-interfering behavior to be significantly less detrimental to both vocational success and a successful marriage and family life. These relationships, however, were not contingent upon sex, as would be expected if the assumption underlying previous research was valid. Unexpectedly, normal-Per subjects believed performance-interfering behavior to facilitate popularity with other college students less ($\bar{x} = 3.05$) than did either low-Per ($\bar{x} = 4.99$) or high-Per ($\bar{x} = 4.71$) students.

Discussion

It seems justified to conclude that if students believe that behavior which interferes with academic performance does not prevent them from attaining their primary goal, they do not perform as well in college as students who believe that such behavior is detrimental to their primary goal attainment. On the other hand, students who believe that behavior which facilitates good grades will help them in attaining their primary goal do not necessarily perform better than students who do not share this belief. The major implication of these findings is that academic performance is affected not by the belief that good grades will facilitate primary goal attainment, but rather by the belief that this goal will not be attainable unless academic performance is high. This distinction may basically be one of whether good grades are believed to be a necessary condition for primary goal attainment, or whether they are considered to be one of a number of factors that may contribute to the attainment of primary goals but are not essential. Another interpretation, based upon the reward-cost formulation of behavior proposed by Thibaut & Kelley (1958), is that high performance is primarily inspired not by a reward orientation (that is, a hope that high performance will increase the likelihood of attaining positive outcomes), but rather by a cost orientation (a fear that low performance will increase the likelihood of receiving negative outcomes).

Three results of this study appear to contradict the assumption that differences between males and females in the personality and motivational factors related to their academic performance are due to sex differences in the perceived relevance of performance to long range vocational and social goal attainment. First, while males and females differed in the importance they attached to vocational success and success in marriage, the importance of these goals was unrelated to performance among members of either sex. Second, males and females did not generally differ in the degree to which they believed academic achievement-related behavior to affect the attainment of either of these goals. Finally, while the estimated effect of performance-interfering behavior upon both vocational and marital success was related to

Table 36

Variables Pertaining to Particular Goals as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios	
1. Vocational success										
a. Performance-facilitating behavior	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
high Per	20.68	20.58	21.58	20.95	20.33	23.05	20.95	21.44	Sex (S)	1.24
normal Per	21.20	21.09	20.55	20.95	21.53	22.05	22.05	21.88	Apt (A)	1.40
low Per	21.20	23.29	21.33	21.94	22.11	22.82	21.68	22.20	Per(P)	1.09
M	21.03	21.65	21.15	21.28	21.32	22.64	21.56	21.84	SxA	.18
									SxP	.15
									AxP	.33
									SxAxP	.73
									MSe=	1.15
b. Performance-interfering behavior										
high Per	-4.47	-3.37	-4.33	-4.06	-5.11	-4.40	-3.65	-4.39	Sex (S)	5.68*
normal Per	-3.50	-3.86	-4.73	-4.03	-4.16	-6.24	-6.65	-5.68	Apt (A)	.38
low Per	-1.00	-2.33	-3.29	-2.21	-4.47	-4.18	-3.53	-4.06	Per (P)	3.52*
M	-2.99	-3.19	-4.12	-3.43	-4.58	-4.94	-4.61	-4.71	SxA	.54
									SxP	.80
									AxP	.78
									SxAxP	.54
									MSe=	1.29
2. Popularity with friends at home										
a. Performance-facilitating behavior										
high Per	6.47	8.58	6.96	7.34	7.78	7.85	5.40	7.01	Sex (S)	.98
normal Per	10.65	7.82	7.23	8.73	6.74	6.05	9.25	7.35	Apt (A)	.14
low Per	7.80	10.67	8.62	9.03	9.68	8.05	9.00	8.91	Per (P)	2.81
M	8.31	9.02	7.77	8.37	8.07	7.32	7.88	7.76	SxA	.81
									SxP	.40
									AxP	1.13
									SxAxP	1.76
									MSe=	1.72

Table 36 (cont)

b. Performance-interfering behavior	Males low Apt	 normal Apt	 high Apt	 M	Females low Apt	 normal Apt	 high Apt	 M	F-ratios	
high Per	5.26	4.53	5.20	5.00	3.94	4.70	7.20	5.28	Sex (S)	.24
normal Per	2.85	6.95	3.50	4.43	3.89	4.38	3.40	3.89	Apt (A)	.45
									Per (P)	2.12
low Per	4.80	5.71	5.90	5.47	6.74	4.64	3.95	5.11	SxA	1.02
									SxP	.20
M	4.30	5.73	4.87	4.97	4.86	4.57	4.85	4.76	AxP	2.41
									SxAxP	1.73
									MSe=	1.10

3. Successful marriage

a. Performance-facilitating behavior	Males low Apt	 normal Apt	 high Apt	 M	Females low Apt	 normal Apt	 high Apt	 M	F-ratios	
high Per	9.11	11.11	12.83	11.02	13.89	13.70	11.55	13.05	Sex (S)	4.23*
normal Per	11.80	10.00	10.91	10.90	12.11	11.24	12.05	11.80	Apt (A)	.00
									Per (P)	.64
low Per	9.60	11.52	10.86	10.66	12.74	11.64	10.79	11.72	SxA	1.58
									SxP	.30
M	10.17	10.88	11.53	10.86	12.91	12.19	11.46	12.19	AxP	.44
									SxAxP	.93
									MSe=	1.88

b. Performance-interfering behavior	Males low Apt	 normal Apt	 high Apt	 M	Females low Apt	 normal Apt	 high Apt	 M	F-ratios	
high Per	- .89	- .58	.04	- .46	-2.44	.50	.60	- .45	Sex (S)	.03
normal Per	-1.65	.23	- .82	- .75	- .32	.14	- .20	- .13	Apt (A)	.67
									Per(P)	3.73*
low Per	1.10	.67	.81	.86	1.84	.64	- .05	.81	SxA	.12
M	- .48	.12	.01	- .12	- .31	.43	.12	.08	SxP	.05
									AxP	1.58
									SxAxP	.78
									MSe=	1.00

4. Being well thought of by parents

a. Performance-facilitating behavior	Males low Apt	 normal Apt	 high Apt	 M	Females low Apt	 normal Apt	 high Apt	 M	F-ratios	
high Per	14.00	15.95	18.21	16.05	16.56	18.45	18.00	17.67	Sex (S)	2.91
normal Per	18.75	18.64	16.95	18.11	19.00	17.19	18.55	18.25	Apt (A)	1.58
									Per (P)	2.39
low Per	14.00	19.67	19.43	17.70	19.89	19.18	18.47	19.18	SxA	2.07
M	15.58	18.09	18.20	17.29	18.48	18.27	18.34	18.37	SxP	.56
									AxP	1.53
									SxAxP	1.67
									MSe=	1.80

Table 36 (cont)

	Males				Females				F-ratios	
b. Performance-interfering behavior	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
high Per	-2.58	-2.32	-3.42	-2.77	-3.72	-2.15	-1.35	-2.41	Sex (S)	.20
normal Per	-2.85	-2.05	-4.50	-3.13	-2.63	-4.10	-4.05	-3.59	Apt (A)	1.29
									Per (P)	.74
low Per	-1.90	-2.19	-4.00	-2.70	-1.47	-4.50	-3.89	-3.29	SxA	1.59
									SxP	.33
M	-2.44	-2.19	-3.97	-2.87	-2.61	-3.58	-3.10	-3.10	AxP	1.21
									SxAxP	.59
5. Popularity with other college students									MSe=	1.22
a. Performance-facilitating behavior										
high Per	8.37	10.11	11.17	9.88	10.67	11.15	9.40	10.41	Sex (S)	.04
normal Per	11.85	11.68	10.18	11.24	8.63	10.81	10.55	10.00	Apt (A)	1.69
									Per (P)	1.72
low Per	9.75	13.62	10.86	11.41	11.95	12.18	11.11	11.75	SxA	.18
									SxP	.76
M	9.99	11.80	10.74	10.84	10.42	11.38	10.35	10.72	AxP	.20
									SxAxP	1.38
									MSe=	1.86
b. Performance-interfering behavior										
high Per	4.37	4.11	4.17	4.22	5.44	4.05	6.10	5.20	Sex (S)	.13
normal Per	1.45	4.18	2.32	2.65	4.00	3.71	2.60	3.44	Apt (A)	.77
									Per (P)	3.96*
low Per	4.85	7.14	4.67	5.55	6.42	4.41	2.47	4.43	SxA	1.80
M	3.56	5.14	3.72	4.14	5.29	4.06	3.72	4.36	SxP	1.21
									AxP	1.08
									SxAxP	.43
									MSe=	1.68

* $p < .05$

** $p < .01$

Per, these relationships were not contingent upon sex. It must be concluded, therefore, that while males and females differ in the goals they believe are of greatest importance to them, sex differences in the motivational factors contributing to performance cannot be attributed to this factor alone. Moreover, there is no support for the assumption that males typically see performance-facilitative behavior as detrimental to social goal attainment, while females typically see this behavior as aiding social goal attainment. While the finding that underachieving males had high desire to receive social goals while underachieving females acknowledged low desire to receive these goals (Table 2) is not invalidated by the results of the present study, the interpretation of this result based upon the above assumption does not appear justified. Reinterpretation of certain other results of earlier phases may also be required.

Despite significant sex differences, vocational success and success in marriage were each considered to be relatively important by both males and females. Relationships between performance and the relevance of performance-interfering behavior to the attainment of these specific goals could therefore result from the fact that these goals are frequently believed to be of greatest importance to college students. The only piece of evidence that might contradict this line of reasoning is the finding that the effect of performance-interfering behavior on being well thought of by parents, also a goal deemed important by students in the sample, was unrelated to Per. This could indicate that the relationships shown in Table 34 do not hold for students who reported that being well thought of by their parents was their most important goal. To investigate this possibility, the relationship between Per and the estimated effect of performance-interfering behavior upon being well thought of by parents was tested for the fifty-nine subjects who selected this goal as being of greatest importance to them. Results were similar to those obtained in analyses of data in Table 34. That is, low performers estimated that performance-interfering behavior would slightly facilitate being well thought of by their parents ($\bar{x} = 2.6$, $n = 20$) while both normal performers and high performers estimated that this behavior would be somewhat detrimental to the attainment of this goal ($\bar{x} = -1.8$, $n = 20$ and $\bar{x} = -.8$, $n = 19$, respectively; $F = 4.73$; df = 2,57; $p < .05$). This finding therefore gives further support to the conclusion that performance is increased to the extent that performance-interfering behavior is seen as detrimental to primary goal attainment, whatever this goal may be. The fact that the estimated effect of performance-interfering behavior upon being well thought of by parents was not related to Per in the entire sample most likely indicates that a substantial number of students who believed that this behavior was detrimental to being well thought of by their parents believed that it was not detrimental to attaining more primary goals.

The finding that normal performers believed that performance-interfering behavior would facilitate their being popular with other college students to a lesser extent that did either higher or lower performers is curious. High performers may believe that such behavior would increase their popularity with other students but feel that this goal is extremely unimportant to them, while low performers tend to share their belief, but unlike high performers, attach a great deal of importance to this goal. This interpretation, however, would imply that the importance attached to being popular with other college students would be related negatively to Per. This was not the case, (Table 35-5). It may therefore be most appropriate to attribute this deviant finding to chance pending replication.

4. General Values of Students and their Parents

To supplement the research reported in the previous section, the relationship of certain general values held by students to academic variables was determined. Information concerning the relationship between parents' and their children's aptitude and performance was also obtained.

The failure for measures indicating a desire for social and academic goals to be related to performance in earlier phases of the research may have been due in part to the failure for the Liverant questionnaire to isolate the various components of these desires. For example, it may be necessary to distinguish between academic goal seeking resulting from intrinsic interest in intellectual activities, and goal seeking that is inspired by reasons other than interest in course content, that is, the instrumentality of good grades to the attainment of vocational goals. Intellectualism typically refers to the tendency to manifest strong intellectual and cultural interests, and to try to learn about things even though the knowledge may not be useful (Scott, 1965). Its effect may differ as a function of academic ability. Students with high ability may automatically acquire enough relevant information to allow them to perform well academically in the course of pursuing fairly esoteric intellectual interests. On the other hand, students of low ability, in order to perform well, may have to devote so much time to fulfill specific course requirements that information not directly relevant to fulfilling these requirements may have to be ignored. Intellectual interests may actually distract such students from the concentrated goal-directed activity required of them to get good grades. High performers of low ability may therefore often be lower in intellectualism than lower performers at this ability level. Previous results (Table 3) indicated that students of high academic aptitude, interest in coursework was related positively to performance, while among low aptitude students it was related negatively to performance.

An alternative interpretation of this earlier finding is that students of low ability have to work so hard to attain good grades that academic pursuits, and the subject matter associated with these pursuits, becomes aversive. High aptitude students, on the other hand, do not have to work excessively to attain academic goals, and are more likely to seek them only to the extent that they wish to receive an indication that they are competent in areas in which they have interest. At any rate, while desire for good grades would be related positively to performance at all levels of aptitude, intellectualism as defined above was expected to be related positively to performance only among students of high academic ability.

Social recognition and social love and affection, as they are conceptualized by Liverant, may also each have separate components. Scott (1965) has isolated two values that appear to be aspects of social recognition. One, social status, refers to being respected by others for one's achievements and for having strong leadership qualities. The second, social skills, pertains to being charming, popular and well-mannered, and to getting along with all kinds of people (Scott, 1965, p. 24). Social love and affection as defined by Liverant may also encompass two values identified by Scott: kindness, which pertains to concern for other persons and the desire to do good for them even at the expense of one's own interest, and social independence, which if reverse scored, would pertain to conformity, going along with the crowd, and acknowledged dependence upon others.

Religiousness, another value isolated by Scott, was of particular interest. Data obtained during Phase 2 indicated that the degree to which entering freshmen expected other students' values to be similar to their own was unrelated to their performance (Table 31-3). On the other hand, the degree to which students expected others to be religious was related positively to performance among males but negatively to performance among females (Table 31-2). If expectancies for others' values in an ambiguous situation are projections of one's own values, these results would suggest the hypothesis that highly religious male students perform relatively well, while highly religious females perform relatively poorly.

There was little consistent evidence during earlier phases of the research that the value attached by parents to academic and social goals exerted major influence upon their children's behavior in college. The subjects studied in these instances, however, were students who were living away from home at the time. It seemed reasonable to expect that parents' values and attitudes would have more pronounced effects upon their children when the latter were in close contact with them. Since this was the case with the majority of the students who took part in the third phase of the research, such effects were investigated.

Description of Measures

Ten values were selected. Their names and definitions as given by Scott (1965, pp. 24-25) are as follows:

1. Intellectualism: Having strong intellectual and cultural interests; trying to learn a great deal about things, even though the knowledge may not be useful.
2. Academic achievement: Studying a great deal and working hard to get good grades.
3. Creativity: Being inventive, creative, and always thinking of different ways of doing things.
4. Social skills: Being charming, popular, well mannered, and getting along with all kinds of people.
5. Status: Having strong leadership qualities, being respected by others, and gaining recognition for one's achievements.
6. Kindness: Being mostly concerned about other people; doing good for them, and trying to make them happy, even if it is against one's own interests.
7. Independence: Being independent, outspoken, free-thinking, and unhampered by the bounds of tradition or social restraint.
8. Religiousness: Being a religious person, both in belief and practice; attending church regularly; and abiding by the Bible's teachings.
9. Honesty: Always telling the truth and being completely honest; never cheating or lying, even though these might make for an easier relationship with others.
10. Physical development: Being a well-developed outdoors type who enjoys physical activity.

Four positively scored items and four reverse scored items assessing each of these values were selected from the scales constructed by Scott and were arranged as indicated in the questionnaire shown in Appendix I; that is, a group of ten positively scored items, one from each value scale, were presented followed by ten negatively scored items, etc.. Items pertained to values arranged in the following order: intellectualism, kindness, social skills, academic achievement, physical development, status, honesty, religiousness, creativity, and independence. Subjects during the same session in which they completed the form described in Part III of this chapter, were presented the questionnaire with instructions to estimate how much they would admire or dislike each characteristic described in other persons, using a seven-point scale ranging from -3 (would dislike very much) to +3 (would admire very much). Items pertaining to each value were then summed after reverse scoring the negative items.

Shortly after the beginning of the first quarter, parents of about 1400 students were sent questionnaires to assess similar values. To shorten the questionnaire, items pertaining to physical development were not included, and the items pertaining to each of the remaining nine values were reduced to six, (items 60 - 80 of the student questionnaire were those omitted). Instructions for making ratings were similar to those given to students, except that parents were asked to estimate how much they would admire or dislike these behaviors in "college students" rather than in "other persons".

Students' Values

Results. Table 37 shows the mean values attached by students to each of the ten values investigated as a function of aptitude (Apt), performance, (Per) and sex. Analyses of variance summaries are presented beside each set of data. The following results involving sex and Apt were significant:

1. Females exceeded males in the value attached to intellectualism, creativity, social skills, kindness, honesty, and religiousness, and were lower than males in the value attached to physical development.
2. The value placed upon social skills was related negatively to Apt. This relationship, however, was more pronounced among females than among males. Females of normal and low Apt attached more value to social skills than did students at all other combinations of sex and Apt.
3. Normal-Apt males and high-Apt females valued kindness less than did males and females, respectively, at other aptitude levels.
4. Normal-Apt and high-Apt females valued honesty less than did males and females, respectively, at other aptitude levels.
5. High-Apt students valued physical development less than normal-Apt or low-Apt students.

The following results involving Per were significant:

1. Among males, intellectualism was related positively to Per except at low Apt, where the relationship was curvilinear; low-Apt, low-Per males and low-Apt, high-Per males both attached relatively little value to intellectualism. Females, however, placed a relatively high value upon intellectualism at all levels of Apt and Per.
2. Among males the value attached to academic achievement increased with Per. Among females, normal performers of normal and high Apt, and low performers of low Apt, placed the greatest value upon academic achievement.

Table 37

Studentś' Values as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
1. Intellectualism										
high Per	11.05	13.10	15.00	13.05	14.57	16.48	13.85	14.97	Sex (S)	22.51**
normal Per	15.10	11.82	12.17	13.03	13.48	15.41	14.95	14.61	Apt (A)	.93
									Per (P)	.83
low Per	9.86	12.27	12.29	11.47	15.52	15.48	14.10	15.03	SxA	1.74
M	12.00	12.73	13.16	12.52	14.52	15.79	14.30	14.87	SxP	1.52
									AxP	1.00
									SxAxP	3.36*
									MSe=	1.11
2. Academic achievement										
high Per	13.75	12.05	12.67	12.82	12.19	11.86	11.50	11.85	Sex (S)	.22
normal Per	13.48	11.50	11.83	12.27	10.95	14.64	13.15	12.91	Apt (A)	1.01
									Per (P)	1.02
low Per	11.10	11.68	11.33	11.37	14.10	12.24	10.60	12.31	SxA	1.24
M	12.77	11.74	11.94	12.15	12.41	12.91	11.75	12.36	SxP	1.87
									AxP	.87
									SxAxP	3.04*
									MSe=	.85
3. Creativity										
high Per	8.80	10.71	9.42	9.64	12.52	12.29	9.10	11.30	Sex (S)	16.51**
normal Per	9.24	9.77	9.96	9.66	11.48	12.00	11.55	11.67	Apt (A)	2.17
									Per(P)	.39
low Per	9.67	10.59	9.42	9.89	11.33	13.05	11.90	12.09	SxA	.61
M	9.23	10.36	9.59	9.73	11.78	12.44	10.85	11.69	SxP	.11
									AxP	.71
									SxAxP	.75
									MSe=	1.05
4. Social skills										
high Per	17.20	15.43	16.58	16.40	18.05	18.71	15.60	17.45	Sex (S)	11.36**
normal Per	17.14	16.68	17.43	17.09	17.43	19.18	18.60	18.40	Apt (A)	3.56*
									Per(P)	1.13
low Per	17.24	15.82	15.08	16.05	20.14	19.38	15.35	18.29	SxA	3.57*
M	17.19	15.88	16.36	16.51	18.54	19.09	16.52	18.05	SxP	.63
									AxP	2.40*
									SxAxP	.58
									MSe=	.94
5. Social status										
high Per	10.60	10.19	9.96	10.25	10.71	10.48	9.15	10.11	Sex (S)	.16
normal Per	9.62	10.00	11.70	10.44	10.71	10.55	10.80	10.69	Apt (A)	.23
									Per (P)	1.58
low Per	10.76	12.27	11.37	11.47	10.43	11.52	10.50	10.82	SxA	.61
M	10.33	10.82	11.01	10.72	10.62	10.85	10.15	10.54	SxP	.34
									AxP	1.15
									SxAxP	.11
									MSe=	.89

Table 37 (cont.)

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
6. Kindness										
high Per	11.50	12.24	12.29	12.01	14.38	16.57	13.95	14.97	Sex (S)	43.26**
normal Per	12.57	10.77	12.26	11.87	14.43	15.73	13.50	14.55	Apt (A)	.70
									Per (P)	.92
low Per	11.19	9.64	11.54	10.79	16.33	14.62	12.90	14.62	SxA	4.05*
M	11.75	10.88	12.03	11.55	15.05	15.64	13.45	14.71	SxP	.52
									AxP	1.17
									SxAxP	.47
									MSe=	1.04
7. Independence										
high Per	7.35	9.00	7.71	8.02	9.38	8.52	7.90	8.60	Sex (S)	2.17
normal Per	8.76	8.86	7.09	8.24	8.86	8.95	8.40	8.74	Apt (A)	1.30
									Per (P)	.72
low Per	9.10	8.73	7.46	8.43	9.81	9.67	9.55	9.68	SxA	.33
M	8.40	8.86	7.42	8.23	9.35	9.05	8.62	9.00	SxP	.20
									AxP	.06
									SxAxP	.38
									MSe=	1.25
8. Religiousness										
high Per	8.15	9.67	7.46	8.42	11.62	11.24	9.35	10.74	Sex (S)	11.55**
normal Per	9.86	8.14	8.87	8.99	9.71	9.14	8.90	9.25	Apt (A)	1.64
									Per (P)	1.15
low Per	6.00	4.95	6.29	5.75	13.29	10.90	7.90	10.69	SxA	.89
M	8.00	7.59	7.54	7.71	11.54	10.43	8.72	10.23	SxP	3.31*
									AxP	.46
									SxAxP	.59
									MSe=	2.47
9. Honesty										
high Per	10.60	7.76	9.04	9.13	11.24	10.95	7.50	9.89	Sex (S)	11.98**
normal Per	8.95	5.59	9.39	7.98	9.81	11.00	9.65	10.15	Apt (A)	2.26
									Per (P)	.95
low Per	7.24	6.18	7.25	6.89	11.71	10.24	8.45	10.13	SxA	4.24*
M	8.93	6.51	8.56	8.00	10.92	10.73	8.53	10.06	SxP	1.45
									AxP	.72
									SxAxP	.50
									MSe=	1.59
10. Physical development										
high Per	11.45	10.24	9.96	10.55	9.33	9.33	5.45	8.04	Sex (S)	21.08**
normal Per	11.00	10.09	9.17	10.09	8.38	7.23	8.25	7.75	Apt (A)	4.40*
									Per (P)	.72
low Per	12.43	11.23	10.62	11.43	9.00	9.71	6.05	8.25	SxA	.65
M	11.63	10.52	9.92	10.69	8.90	8.76	6.58	8.08	SxP	.28
									AxP	.58
									SxAxP	.86
									MSe=	1.45

* $p < .05$
** $p < .01$

3. High-Apt, low-Per (underachieving) students attached less value to social skills than did students at other combinations of Apt and Per.

4. Low-Per males were lower in religiousness than were normal-Per or high-Per males, while normal-Per females were lower in religiousness than both higher or lower performing females.

Discussion

Hypotheses concerning the relationship of academic achievement and intellectualism to performance were supported only among males. That is, high performing males of low ability attached a great deal of importance to good grades (more so, in fact, than male students at any other level of Apt and Per), but had little intrinsic interest in the subject matter in which these grades are obtained. The most appropriate interpretation of these results (see p.132) cannot be determined. Neither would apply to females, who were similar in intellectualism at all levels of Apt and Per and who generally placed more value upon academic achievement at lower performance levels than at higher levels. The generally high value attached to intellectualism by females relative to males may reflect differences in social role descriptions of males and females, and therefore in the training to fulfill these roles. Agreement with several items indicating intellectual interests is in fact assumed to indicate "femininity" on the M-F scale of the EPPS. It is noteworthy that females and males did not differ in the value they attached to academic achievement; while females acknowledged greater intellectual interests than males, they did not necessarily attach greater value to performing well in activities related to these interests. The lack of relationship between intellectualism and performance among females is consistent with this interpretation.

Unlike males, females whose performance level exceeded their ability level attached less importance to academic achievement than did females whose performance was commensurate with their ability. This result substantiates the finding that high performing females have less desire to receive academic recognition (Table 2). An exception to this occurred at high Apt, where normal performers attached the greatest importance to academic acheivement. Females who believe good grades to be important may spend enough time in achievement-related activity to attain an average level of performance. However, the incentive to put forth the effort required to attain high performance, or a performance level higher than that predicted on the basis of aptitude test scores, may be provided by factors other than the desire for good grades per se. This interpretation is consistent with the general hypothesis that females' performance, unlike males' performance, is typically not due to a desire for personal achievement.

High-Apt, low-Per students of both sexes attached less value to social skills than did subjects at other levels of aptitude and performance. No other relationships between performance and values pertaining to the quality of social relationships were significant. Underachieving students may either be sensitive to others' expectations for their behavior, or else are less willing to adopt the skills necessary to conform to these expectations. However, they do not necessarily have less interest in other persons than do other students (Table 36-6), nor do they place generally less value upon social approval (Table 36-5,7). Underachievers may merely be less conventional a characteristic that, if it affects their reaction to the regimented requirements of a normal academic curricula, could be detrimental to their performance.

An alternative interpretation is that the failure to attach importance to social skills indicates an alienation from ones social environment that also could lead to ineffective goal seeking. At any rate, this result in combination with the absence of a similar relationship involving the value of social status, suggests that the inconsistency of earlier findings involving social recognition may have been due in part to the failure to distinguish between recognition for personal achievement and leadership, and recognition for being socially sophisticated and adept.

Although hypotheses concerning the relationship of religiousness to performance were also supported only among males, the results obtained are not necessarily inconsistent with the assumption that religiousness encourages students to adhere to the predominant social role prescription established for them by their society (p 116). The sample used in the present study, unlike the Colorado sample contained a substantial number of females students from homes in which the mother had to share in support of the family. Such females might be more apt to see vocational success as a necessary aspect of their social role. Religiousness in these females may have an effect similar to that found among males; that is, it may increase performance. However, religiousness may have the opposite effect upon females who do not see their social role as involving family support, as suggested by the Colorado study and by the high religiousness of low performing females in this sample.

The relationship between honesty and aptitude is of particular interest, since either a positive or a negative relationship could have been predicted. That is, high-Apt students, who have less reason to be dishonest in academic areas, might be expected to value honesty more than low-Apt students, who may rationalize their need to be dishonest in these areas. On the other hand, students of high ability may have generally more liberal attitudes and be less moralistic than students of lower aptitude. Of these two possibilities, the second is more consistent with female data. Possibly among males both factors are operative. That is, high-Apt males are honest because they have no need to be otherwise, while low-Apt males are more honest due to a general conservatism and authoritarianism that may predominate among persons of low intellectual ability and experience (Adorno, Frenkel-Brunswik, Levinson & Sanford, 1950, Hyman & Sheatsley, 1954).

Why both factors would operate among males and not among females must still be explained, however. Possibly females, for whom high academic performance is not as important in attaining their primary goals, are less concerned over poor performance and therefore are less apt to be dishonest in academic areas regardless of their aptitude. Differences in values resulting from differences in the need to be dishonest would therefore not occur among females. (The generally greater honesty acknowledged by females relative to males could also be interpreted in this light.)

The fact that honesty and kindness were similarly related to Apt among males and females would seem to indicate that the dynamics underlying these relationships is similar. However, since these values are generally uncorrelated (r = .15; of C.F. Scott, 1965p.28) this is probably not the case. The low value attached by high-Apt females to both kindness and social skills, are consistent with earlier indications of their aloofness (Table 1, page11). Why high ability males in the college sample used during this phase of the study attached a fairly high value to kindness is unclear.

Parents' Values

Results. Tables 38 and 39 show the mean values of mothers and fathers as a function of the sex, aptitude and performance of their children. Only one relationship involving aptitude and sex independent of performance was significant: The value attached by fathers to creativity was related positively to the aptitude of their children. The following results involving performance reached significance:

1. The value that mothers of normal-Apt and high-Apt students placed upon intellectualism was related negatively to their children's performance. Among low-Apt students, however, this relationship was nonsignificantly positive.

2. The value attached by mothers to academic achievement was related negatively to Per. Investigation of significant interactions indicated that this relationship was more pronounced among females than among males, and stronger among normal and high-Apt students than among low-Apt students. In fact, at low-Apt the relationship between Per and maternal emphasis upon academic achievement was positive.

3. Fathers of high-Per males valued honesty less than did fathers of males at lower performance levels. On the other hand, fathers of normal-Per females valued honesty less than did fathers of either higher or lower performing females.

Discussion

While few reliable relationships between parents' values and students' performance occurred, those that reached significance are of heuristic interest. While the value of both academic achievement and intellectualism to male students was related positively to their performance, the importance attached by mothers to these characteristics was related negatively to Per in the case of both males and females. This could have several interpretations. First, students of high ability, who are typically more assertive than students of lower aptitude (Table 1) may react negatively to maternal pressures and hence may become anti-intellectual and nonachievement-oriented to the extent that their mothers emphasize the importance of intellectual and academic activity. However, among lower aptitude students, who are more acquiescent and submissive, maternal pressure in these areas may have positive effects. That fathers' values in this area were not similarly related to their children's performance may indicate either that fathers, regardless of their values, do not attempt to influence their children in academic areas, or that their attempts at influence are not reacted to negatively by high ability students.

An alternative interpretation is that mothers whose children typically perform lower than their measured ability emphasize the importance of intellectual and academic achievement-related characteristics as a result of concern over their children's underachievement. This interpretation, while plausible, is less likely to be correct than the first since it fails to account for the positive relationship between Per and maternal values in the case of low-Apt students, and since values were measured before parents had received information about their children's performance in college. Furthermore, if the second interpretation is correct, it is surprising that a similar relationship did not occur when fathers' values in these areas

Table 38

Mothers' Values as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
1. Intellec-tualism										
high Per	10.82	10.15	12.13	11.03	11.62	10.65	9.55	10.61	Sex (S)	1.35
normal Per	11.00	10.65	10.78	10.81	11.29	12.29	12.57	12.05	Apt (A)	1.50
low Per	10.19	12.61	11.62	11.47	10.23	13.42	12.44	12.03	Per (P)	1.94
M	10.67	11.14	11.51	11.11	11.05	12.12	11.52	11.56	SxA	.51
									SxP	1.52
									AxP	2.53*
									SxAxP	1.32
									MSe=	.69
2. Academic achieve-ment										
high Per	13.64	12.00	13.70	13.11	12.87	10.65	9.45	10.99	Sex (S)	3.70
normal Per	12.60	13.30	13.00	12.97	12.65	12.43	14.64	13.24	Apt (A)	.18
low Per	12.37	13.67	13.21	13.08	12.62	13.17	12.56	12.78	Per (P)	3.06*
M	12.87	12.99	13.30	13.05	12.71	12.08	12.22	12.34	SxA	.58
									SxP	3.74*
									AxP	2.65*
									SxAxP	1.84
									MSe=	.62
3. Creativity										
high Per	7.37	7.77	7.30	7.48	7.81	8.06	6.65	7.51	Sex (S)	.76
normal Per	8.47	8.70	6.70	7.95	7.94	7.86	8.93	8.24	Apt (A)	1.42
low Per	6.81	9.33	7.17	7.77	7.69	8.58	9.22	8.50	Per (P)	1.09
M	7.55	8.60	7.06	7.74	7.82	8.17	8.27	8.08	SxA	1.43
									SxP	.26
									AxP	.72
									SxAxP	1.10
									MSe=	.71
4. Social skills										
high Per	17.00	15.77	15.70	16.15	15.25	15.94	14.65	15.28	Sex (S)	.18
normal Per	15.87	15.40	15.61	15.62	15.53	16.71	15.79	16.01	Apt (A)	.87
low Per	15.69	16.00	16.17	15.95	14.38	17.00	16.67	16.02	Per (P)	.22
M	16.18	15.72	15.82	15.91	15.05	16.55	15.70	15.71	SxA	2.91
									SxP	1.30
									AxP	1.50
									SxAxP	.12
									MSe=	.50
5. Social status										
high Per	10.82	7.77	9.83	9.47	9.87	8.35	7.55	8.59	Sex (S)	.65
normal Per	9.67	9.65	9.52	9.61	9.06	8.95	9.79	9.26	Apt (A)	.55
low Per	8.56	10.17	8.62	9.12	9.00	8.92	10.11	9.34	Per (P)	.32
M	9.68	9.20	9.32	9.40	9.31	8.74	9.15	9.67	SxA	.04
									SxP	.59
									AxP	1.79
									SxAxP	1.36
									MSe=	.77

Table 38 (cont.)

	Males				**Females**				**F-ratios**	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
6.Kindness										
high Per	9.82	11.77	11.09	10.89	12.19	11.24	10.35	11.26	Sex (S)	.60
normal Per	12.47	12.05	10.70	11.74	10.76	10.43	11.29	10.83	Apt (A)	1.25
									Per (P)	.09
low Per	10.75	12.11	11.37	11.41	11.85	11.50	9.67	11.00	SxA	1.26
M	11.01	11.98	11.05	11.35	11.60	11.05	10.43	11.03	SxP	.82
									AxP	.26
									SxAxP	1.57
7.Independence									MSe=	.76
high Per	4.64	1.54	2.65	2.94	4.50	- .47	2.50	2.18	Sex (S)	.22
normal Per	2.80	3.45	1.87	2.71	1.88	1.29	3.07	2.08	Apt (A)	2.35
									Per (P)	.05
low Per	2.87	1.22	2.75	2.28	2.77	3.58	2.33	2.90	SxA	.19
M	3.44	2.07	2.42	2.53	3.05	1.47	2.63	2.38	SxP	.62
									AxP	1.79
									SxAxP	1.05
8.Religiousness									MSe=	1.38
high Per	11.00	10.46	11.30	10.92	11.50	9.88	8.95	10.11	Sex (S)	.18
normal Per	8.33	9.50	9.83	9.22	8.53	10.86	11.79	10.39	Apt (A)	.30
									Per (P)	.43
low Per	10.06	11.61	8.92	10.20	12.77	10.83	8.56	10.72	SxA	.38
M	9.80	10.52	10.02	10.11	10.93	10.59	9.76	10.41	SxP	.71
									AxP	1.77
									SxAxP	.56
9.Honesty									MSe=	2.16
high Per	7.73	6.15	7.22	7.03	8.75	5.29	5.40	6.48	Sex (S)	.43
normal Per	6.20	8.25	8.17	7.54	7.59	8.14	8.00	7.91	Apt (A)	.38
									Per (P)	1.48
low Per	7.81	9.00	8.17	8.33	8.08	8.42	5.67	7.39	SxA	1.48
M	7.25	7.80	7.85	7.63	8.14	7.28	6.36	7.26	SxP	.46
									AxP	1.90
									SxAxP	.09
									MSe=	1.46

* $p < .05$
** $p < .01$

Table 39

Fathers' Values as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1.Intellectualism										
high Per	8.50	9.86	10.58	9.65	12.06	10.50	10.53	11.03	Sex (S)	3.52
normal Per	11.00	10.53	10.90	10.81	9.41	11.73	10.71	10.62	Apt (A)	1.55
									Per (P)	.57
low Per	7.67	10.90	9.17	9.25	9.92	11.15	11.56	10.88	SxA	.22
									SxP	1.30
M	9.06	10.43	10.22	9.91	10.46	11.13	10.93	10.84	AxP	.62
									SxAxP	1.46
2.Academic achievement									MSe=	1.12
high Per	13.75	11.79	12.50	12.68	12.65	11.94	11.63	12.07	Sex (S)	.20
normal Per	11.71	11.79	13.43	12.27	10.76	12.50	12.21	11.83	Apt (A)	.86
									Per (P)	.24
low Per	10.78	13.05	12.43	12.09	11.77	12.62	13.33	12.57	SxA	.16
									SxP	.67
M	12.08	12.21	12.75	12.35	11.73	12.35	12.39	12.16	AxP	2.05
									SxAxP	.59
3.Creativity									MSe=	.78
high Per	4.67	6.94	6.33	5.98	9.06	8.17	6.37	7.86	Sex (S)	2.51
normal Per	5.86	7.16	6.29	6.52	5.53	7.91	7.36	6.93	Apt (A)	3.50*
									Per (P)	.12
low Per	4.83	6.48	7.43	6.24	4.85	6.38	6.89	6.04	SxA	.69
									SxP	2.00
M	5.12	6.85	6.77	6.25	6.48	7.49	6.87	6.95	AxP	1.30
									SxAxP	1.25
4.Social skills									MSe=	.87
high Per	15.92	13.36	14.25	14.51	15.35	15.00	14.84	15.07	Sex (S)	.94
normal Per	15.86	14.79	15.48	14.37	14.65	15.82	14.93	15.13	Apt (A)	.16
									Per (P)	.79
low Per	13.67	15.57	13.87	14.37	14.46	15.54	15.33	15.11	SxA	.95
									SxP	.67
M	15.15	14.57	14.52	14.75	14.82	15.45	15.03	15.10	AxP	1.82
									SxAxP	.81
5.Social status									MSe=	.60
high Per	9.00	7.64	8.58	8.41	8.88	8.44	9.05	8.79	Sex (S)	.01
normal Per	8.50	8.68	9.86	8.99	8.71	9.45	8.43	8.86	Apt (A)	.56
									Per (P)	.23
low Per	8.06	9.90	8.96	8.97	7.77	9.92	8.78	8.82	SxA	.35
									SxP	.16
M	8.52	8.74	9.10	8.79	8.45	9.27	8.75	8.83	AxP	1.26
									SxAxP	.24
									MSe=	.86

Table 39 (cont.)

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
6. Kindness										
high Per	9.25	8.57	10.25	9.36	10.35	11.28	10.84	10.82	Sex (S)	1.14
									Apt (A)	.29
normal Per	8.93	9.53	10.43	9.67	9.00	10.00	9.93	9.64	Per (P)	1.78
low Per	9.44	9.57	9.00	9.00	10.23	8.69	8.22	9.05	SxA	.70
									SxP	1.10
M	8.87	9.22	9.93	9.34	9.86	9.99	9.66	9.84	AxP	.60
									SxAxP	.64
7. Independence									MSe=	.96
high Per	-1.67	-.36	-.54	-.86	2.82	2.78	.37	1.99	Sex (S)	2.49
									Apt (A)	.28
normal Per	-.07	.05	-.48	-.17	-.53	.36	1.07	.30	Per (P)	1.81
low Per	-.50	-2.05	.91	-.54	-1.00	-2.38	.22	-1.05	SxA	.09
									SxP	2.81
M	-.75	-.78	-.04	-.52	.43	.25	.55	.41	AxP	1.41
									SxAxP	.64
8. Religiousness									MSe=	1.58
high Per	9.83	8.71	8.71	9.09	9.59	7.17	9.47	8.74	Sex (S)	.06
									Apt (A)	.79
normal Per	7.93	8.47	10.86	9.12	7.29	9.18	9.86	8.78	Per (P)	.01
low Per	7.94	10.38	7.87	8.73	8.15	9.00	9.67	8.94	SxA	.32
									SxP	.08
M	8.57	9.19	9.18	8.98	8.35	8.45	9.67	8.82	AxP	1.52
									SxAxP	.50
9. Honesty									MSe=	1.79
high Per	6.17	2.79	5.08	4.68	7.82	7.56	6.95	7.44	Sex (S)	.16
									Apt (A)	.52
normal Per	7.93	6.79	8.95	7.80	5.06	6.27	6.36	5.80	Per (P)	1.56
low Per	7.28	8.29	6.91	7.49	8.31	6.31	7.67	7.43	SxA	.15
									SxP	4.39*
M	7.12	5.95	6.89	6.66	7.06	6.71	6.99	6.92	AxP	.41
									SxAxP	.89
									MSe=	1.89

* $p < .05$

** $p < .01$

were considered. Possibly the degree to which fathers emphasize these characteristics is not affected by their children's goal attainment in these areas.

The interaction of sex and Per with regard to the value attached to honesty by fathers is difficult to interpret. Fathers who inspire their sons to perform well in college may tend to be more liberal and tend less to have inflexible standards of morality. Alternatively, moralistic fathers may dampen intellectual interests in their children, or may induce rigid, unquestioning behavioral tendencies that are detrimental to academic effectiveness. Why this reasoning is not equally applicable to female students is not clear. Moralistic paternal attitudes are associated with high as well as low performance among females. It should be noted also that indexes of the degree to which the father exercised punitive, authoritarian control over his children were unrelated to Per in the second phase of the study.

5. Further Investigation of The Effects of Alienation and Conflict

Results of Phase 2 suggested that students who had not developed a stable set of standards for evaluating themselves before they enter college were relatively less apt to perform well. During this phase, several additional measures expected to indicate the magnitude of this stability were considered. These measures were divided into two classes: those assumed to indicate the degree to which the student is alienated either from his home environment or from the college environment, and those expected to reflect the degree of conflict or disagreement existing within the home environment itself. Each class of variables will be discussed in turn.

Alienation from the Home Environment

Results obtained during Phase 2 indicated that students who get along well with their parents performed better in college than did students whose relationship with their parents was less favorable. While data was more tenuous, the hypothesis was also suggested that performance increases with the degree of similarity between students' values and those of their parents.

To explore this possibility in more detail, the degree of similarity between each student's values and those of each parent was obtained by computing the absolute difference between the parent's response and the student's response to each of the 54 items in common to parents' and students' questionnaires, and then summing these differences over items. A total discrepancy score and a discrepancy score for each of the nine values individually were computed.

Results. The mean absolute discrepancy between students' values and mothers' values (D_{sm}) on each of the nine values considered, and also across values, is shown in Table 40 as a function of Apt, Per and sex. Significant results are summarized below:

1. D_{sm} with respect to kindness was greater among males than among females.

2. The total discrepancy between students and their mothers (D_{sm} - T) was greater among males than among females.

Table 40

Absolute Discrepancy in Values Between Students and their Mothers as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1.Intellectualism										
high Per	7.00	6.46	5.43	6.30	6.62	6.12	5.68	6.14	Sex (S)	3.85
normal Per	6.69	6.95	5.41	6.35	6.76	5.29	5.64	5.89	Apt (A)	2.29
									Per (P)	.08
low Per	7.00	6.72	6.43	6.72	5.46	4.92	5.78	5.39	SxA	1.13
M	6.89	6.71	5.76	6.48	6.28	5.44	5.70	5.81	SxP	1.15
									AxP	.49
									SxAxP	.25
									MSe=	.49
2.Academic achievement										
high Per	5.91	6.38	6.52	6.27	6.69	5.76	6.89	6.45	Sex (S)	.01
normal Per	6.62	6.95	6.77	6.78	6.35	6.19	6.07	6.20	Apt (A)	1.17
									Per (P)	1.87
low Per	7.44	6.89	6.39	6.91	5.54	7.00	9.67	7.74	SxA	1.24
M	6.65	6.77	6.56	6.65	6.19	6.32	7.54	6.68	SxP	.78
									AxP	.68
									SxAxP	2.31
									MSe=	.58
3.Creativeness										
high Per	6.73	7.23	6.96	6.97	7.37	6.12	6.58	6.69	Sex (S)	1.41
normal Per	7.31	6.84	6.32	6.82	6.06	5.90	6.14	6.04	Apt (A)	.96
									Per (P)	.76
low Per	7.87	7.22	5.87	6.99	6.92	6.58	7.00	6.84	SxA	.87
M	7.30	7.10	6.38	6.93	6.79	6.20	6.57	6.52	SxP	.32
									AxP	.13
									SxAxP	.68
									MSe=	.53
4.Social skills										
high Per	4.73	5.69	4.78	5.07	4.87	3.53	5.00	4.47	Sex (S)	1.35
normal Per	4.08	5.16	4.36	4.53	4.41	3.14	3.79	3.78	Apt (A)	1.90
									Per (P)	2.23
low Per	4.81	4.83	5.22	4.95	4.08	3.67	7.56	5.10	SxA	4.36*
M	4.54	5.23	4.79	4.85	4.45	3.44	5.44	4.45	SxP	.64
									AxP	1.70
									SxAxP	1.02
									MSe=	.54
5.Social status										
high Per	7.27	6.54	6.43	6.75	6.69	7.12	5.37	6.39	Sex (S)	.01
normal Per	6.23	6.37	5.27	5.96	7.00	5.57	6.07	6.21	Apt (A)	3.76*
									Per (P)	.77
low Per	7.37	6.11	5.17	6.22	6.62	6.25	6.44	6.44	SxA	.24
M	6.96	6.34	5.63	6.31	6.77	6.31	5.96	6.35	SxP	.39
									AxP	.18
									SxAxP	1.30
									MSe=	.46

Table 40 (cont.)

	Males low Apt	Males nor-mal Apt	Males high Apt	Males M	Females low Apt	Females nor-mal Apt	Females high Apt	Females M	F-ratios	
6.Kindness										
high Per	7.82	8.62	7.43	7.96	6.87	6.41	6.37	6.55	Sex (S)	10.86**
normal Per	7.69	7.42	6.55	7.22	6.41	6.57	5.50	6.16	Apt (A)	3.43*
									Per (P)	1.26
low Per	8.44	8.67	6.61	7.90	6.00	8.00	6.33	6.78	SxA	.37
M	7.98	8.23	6.86	7.69	6.43	6.99	6.07	6.49	SxP	.08
									AxP	.50
									SxA$_x$P	.60
									MSe=	.59
7.Independence										
high Per	10.09	10.08	8.43	9.53	8.94	12.35	8.53	9.97	Sex (S)	.68
normal Per	9.69	9.79	8.23	9.24	9.41	10.00	9.71	9.71	Apt (A)	2.99
									Per (P)	1.70
low Per	8.94	10.39	7.00	8.78	9.00	7.17	10.56	8.91	SxA	2.86
M	7.64	10.09	7.89	9.18	9.12	9.87	9.60	9.52	SxP	.06
									AxP	1.37
									SxAxP	3.70**
									MSe=	.75
8.Religiousness										
high Per	9.27	7.23	10.00	8.83	7.12	7.88	6.37	7.13	Sex (S)	3.11
normal Per	9.31	9.68	6.95	8.65	9.53	8.95	8.00	8.83	Apt (A)	.39
									Per (P)	.68
low Per	7.75	10.56	8.30	8.87	5.46	7.50	9.56	7.51	SxA	.26
M	8.78	9.19	8.42	8.77	7.37	8.11	7.97	7.82	SxP	1.12
									AxP	2.19
									SxAxP	1.87
									MSe=	1.35
9.Honesty										
high Per	9.82	11.23	9.22	10.09	8.75	10.06	8.89	9.23	Sex (S)	2.01
normal Per	9.77	10.58	9.27	9.87	9.59	9.14	8.21	8.98	Apt (A)	1.46
									Per (P)	1.29
low Per	10.81	9.61	10.39	10.27	10.15	10.58	9.89	10.21	SxA	.00
M	10.13	10.47	9.63	10.08	9.49	9.93	9.00	9.47	SxP	.40
									AxP	.67
									SxAxP	.44
									MSe=	.81
10.Total discrepancy										
high Per	68.64	69.46	65.22	67.77	63.94	65.35	59.68	62.99	Sex (S)	5.35*
normal Per	67.38	69.74	59.14	65.42	65.53	60.76	59.14	61.81	Apt (A)	1.70
									Per (P)	.79
low Per	70.44	71.00	61.39	67.61	59.23	61.67	72.78	64.56	SxA	3.13*
M	68.82	70.07	61.92	66.93	62.90	62.59	63.87	63.12	SxP	.09
									AxP	1.06
									SxAxP	2.12
									MSe=	12.24

* $p < .05$

** $p < .01$

3. D_{sm} with respect to kindness was related negatively to Apt.
4. Among males, D_{sm} with respect to social skills was greatest at normal Apt; among females, it was least at normal Apt.
5. D_{sm} with respect to social status was related negatively to Apt.
6. D_{sm} with respect to independence was related positively to Per among low-Apt and high-Apt males and normal-Apt females; at other combinations of Apt and sex, the relationship was, if anything, negative.
7. D_{sm} -T decreased with Apt among males but increased with Apt among females. The relationship among females was due primarily to the high discrepancy among those both low in Per and high in Apt (i.e., among underachievers).

The mean absolute discrepancy between students' values and fathers' values (D_{sf}) on each value and across values is shown in Table 41 as a function of Apt, Per and sex. The following results were significant:

1. D_{sf} with respect to intellectualism was greater among males than among females.
2. D_{sf} with respect to kindness was greater among males than among females.
3. The total discrepancy between students' values and fathers' values (D_{sf} -T) was greater among males than among females.
4. D_{sf} with respect to intellectualism was related negatively to Apt among males; among females, D_{sf} was greatest among those of normal Apt.
5. D_{sf} with respect to social status was related negatively to Apt.
6. Among males, D_{sf} with respect to academic achievement was greatest at normal Per; among females, D_{sf} with respect to this value was lowest at normal Per.
7. Among males, D_{sf} with respect to independence increased with Per; among females, D_{sf} with respect to this value was lowest at normal Per.

Discussion. It was hypothesized that students whose values were similar to those of their parents have acquired a set of standards in the home environment that increases their goal-seeking effectiveness in college. This hypothesis must be flatly rejected on the basis of data reported here. Not only was the total discrepancy between students' values and those of their parents unrelated to Per, but results of analyses of discrepancies pertaining to individual values were equivocal. If the measure of parent-student similarity in values is valid, then it must be concluded that similarity in general values between students and their parents neither facilitates nor is detrimental to their academic effectiveness.

Table 41

Absolute Discrepancy in Values between Students and their Fathers as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				**Females**				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1. Intellectualism										
high Per	7.00	6.46	5.74	6.40	5.69	7.82	5.21	6.24	Sex (S)	11.02**
normal Per	9.23	7.42	6.27	7.64	6.41	5.95	6.21	6.19	Apt (A)	3.89*
									Per (P)	1.25
low Per	7.94	7.33	6.52	7.26	5.00	6.25	5.33	5.53	SxA	3.44*
									SxP	2.08
M	8.06	7.07	6.17	7.10	5.70	6.68	5.59	5.99	AxP	1.10
									SxAxP	.68
									MSe=	.51
2. Academic achievement										
high Per	5.45	6.31	6.48	6.08	7.25	6.82	7.26	7.11	Sex (S)	.13
normal Per	9.00	7.68	6.32	7.67	6.47	5.90	5.50	5.96	Apt (A)	.02
									Per (P)	.39
low Per	7.81	6.50	6.61	6.97	5.00	8.08	8.44	7.18	SxA	1.45
									SxP	3.38*
M	7.42	6.83	6.47	6.91	6.24	6.94	7.07	6.75	AxP	1.41
									SxAxP	1.56
									MSe=	.88
3. Creativity										
high Per	8.00	8.85	6.87	7.93	7.19	8.12	7.37	7.56	Sex (S)	1.06
normal Per	9.00	6.84	7.23	7.69	6.35	6.86	6.29	6.50	Apt (A)	2.34
									Per (P)	1.10
low Per	8.44	7.50	6.78	7.57	8.23	8.50	6.89	7.87	SxA	1.04
									SxP	1.15
M	8.48	7.73	6.96	7.73	7.26	7.83	6.85	7.31	AxP	.69
									SxAxP	.43
									MSe=	.73
4. Social skills										
high Per	4.18	5.54	5.35	5.02	5.31	3.82	5.21	4.78	Sex (S)	1.33
normal Per	4.62	4.16	4.50	4.42	4.24	4.00	4.50	4.25	Apt (A)	1.88
									Per (P)	1.64
low Per	5.75	5.17	5.43	5.45	2.92	4.67	6.44	4.68	SxA	1.00
									SxP	.30
M	4.88	4.95	5.09	4.96	4.16	4.16	5.38	4.79	AxP	.58
									SxAxP	2.21
5. Social status									MSe=	.54
high Per	6.91	8.15	6.52	7.19	7.12	6.59	6.84	6.85	Sex (S)	.84
normal Per	8.00	7.16	5.82	6.99	6.88	6.57	5.57	6.34	Apt (A)	4.13*
									Per (P)	.49
low Per	7.69	6.39	5.78	6.62	7.23	6.92	5.56	6.57	SxA	.16
									SxP	.21
M	7.53	7.23	6.04	6.93	7.08	6.69	5.99	6.59	AxP	.58
									SxAxP	.53
									MSe=	.65

Table 41 (cont.)

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
6.Kindness										
high Per	8.55	8.77	8.17	8.49	7.62	6.47	7.16	7.08	Sex (S)	9.17**
normal Per	7.46	7.32	7.50	7.46	6.88	8.14	5.86	6.96	Apt (A)	.83
low Per	9.56	9.17	8.26	8.99	6.54	8.08	7.33	7.32	Per (P)	2.06
M	8.52	8.42	7.98	8.31	7.02	7.63	6.78	7.36	SxA	.23
									SxP	.88
									AxP	.34
									SxAxP	1.15
									MSe=	.69
7.Independence										
high Per	13.18	13.00	10.61	12.26	10.69	11.00	10.74	10.81	Sex (S)	.00
normal Per	13.00	10.05	9.86	10.97	10.88	10.95	9.43	10.42	Apt (A)	2.91
low Per	9.00	11.83	8.35	9.73	11.08	12.58	11.78	11.81	Per (P)	1.06
M	11.73	11.63	9.61	10.99	10.88	11.51	10.65	11.01	SxA	1.11
									SxP	4.17*
									AxP	1.38
									SxAxP	.68
									MSe=	1.21
8.Religiousness										
high Per	9.09	8.77	8.78	8.88	6.00	9.12	7.89	7.67	Sex (S)	3.18
normal Per	8.15	9.32	8.23	8.57	7.59	8.71	8.50	8.27	Apt (A)	.80
low Per	9.31	10.06	7.39	8.92	7.46	6.25	9.56	7.76	Per (P)	.03
M	8.85	9.38	8.13	8.79	7.02	8.03	8.65	7.89	SxA	2.06
									SxP	.35
									AxP	.36
									SxAxP	1.76
									MSe=	1.12
9. Honesty										
high Per	9.27	10.46	9.22	9.65	9.69	9.18	9.37	9.41	Sex (S)	.00
normal Per	9.77	9.84	9.09	9.57	11.06	10.95	8.86	10.29	Apt (A)	.50
low Per	10.12	10.11	10.74	10.33	9.31	10.08	9.89	9.76	Per (P)	.43
M	9.72	10.14	9.68	9.85	10.02	10.07	9.37	9.86	SxA	.14
									SxP	.67
									AxP	.59
									SxAxP	.37
									MSe=	1.00
10.Total discrepancy										
high Per	71.64	76.31	67.74	71.90	66.56	68.94	67.05	67.52	Sex (S)	5.31*
normal Per	78.23	69.79	64.82	70.95	66.76	68.05	60.71	65.17	Apt (A)	2.59
low Per	75.62	74.06	65.87	71.85	62.77	71.42	71.22	68.47	Per (P)	.43
M	75.16	73.39	66.14	71.56	65.36	69.47	66.33	67.05	SxA	2.20
									SxP	.13
									AxP	.82
									SxAxP	.65
									MSe=	17.20

* p < .05

** p < .01

The few significant results involving performance pertained to the value attached to academic achievement and to social independence. These results, however, were not clearly interpretable, and an extended discussion of them is not justified.

Difference in Values within the Home Environment

Data obtained during Phase 2 suggested that when parents disagreed in the criteria they used for evaluating their child along dimensions relevant to academic effectiveness, the student was unable to adopt a stable set of criteria for self evaluation; failure to establish this referent resulted in a decrease in academic effectiveness. Parental disagreement in values was expected to have similar effects. If students are unable to rely upon their home environment for establishing consistent values and criteria for evaluating their behavior, they may spend a greater amount of time seeking approval for their behavior from persons outside the home resulting in less effective pursuit of academic goals.

To test this hypothesis, for each student whose parents had both returned questionnaires, the absolute difference between the mother's response and the father's response to corresponding items defining each of the nine values under consideration, and the total discrepancy between parents summed across values, were computed. These data are shown in Table 42 as a function of Apt, Per and sex. The following results were significant:

1. The total discrepancy in values was greater between parents of normal-Apt students than between parents of low-Apt or high-Apt students. A similar relationship held for the following values analyzed separately: kindness, social status, independence and honesty.

2. The total discrepancy between parents in their values was related negatively to Per among low-Apt students, was related positively to Per among normal-Apt students and was unrelated to Per among high-Apt students, whose parents were relatively similar in their values. A similar interactive relationship occurred in analyses of religiousness.

In interpreting the above results it was necessary to determine whether they were due to between-parent disagreement independent of the nature of the disagreement, or whether they might be a consequence of a general tendency of one parent to exceed the other in the values in question. Supplementary analyses were therefore performed on the numerical discrepancy between mothers and fathers in the values considered in this study. The degree to which mothers exceeded fathers both in each value and in their responses summed over values, is shown in Table 43 as a function of Apt, Per and sex.

The following results involving performance reached significance:

1. Mothers of normal-Per males and high-Per females exceeded their husbands by less in the value they placed upon intellectualism than did students at other combinations of sex and Per. In fact, fathers of high-Per females, unlike fathers of males or fathers of females at lower performance levels, exceeded their wives in the value they placed upon intellectualism.

2. The degree to which mothers exceeded fathers in the value they placed upon independence was related negatively to Per among females but was related positively to Per among males. Moreover, it was related reliably negatively to Per only among students of normal Apt.

Table 42

Absolute Discrepancy between Values of Mothers and Values of Fathers as a Function of Aptitude (Apt), Performance (Per) and Sex

	Males				Females				F-ratios
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M	
1. Intellec-tualism									
high Per	6.73	7.08	4.48	6.09	5.06	5.35	6.05	5.49	Sex (S) 1.15
normal Per	6.38	6.37	4.77	5.84	6.00	5.43	6.43	5.95	Apt (A) 1.52 Per (P) .60
low Per	7.06	4.61	5.65	5.78	5.54	5.00	4.67	5.07	SxA 2.49
M	6.72	6.02	4.97	5.90	5.53	5.26	5.72	5.50	SxP .48 AxP .73 SxAxP 1.32 Mse= .62
2. Academic achieve-ment									
high Per	3.73	5.31	3.70	4.24	4.94	5.41	6.05	5.47	Sex (S) .14
normal Per	6.85	5.05	4.73	5.54	5.18	5.05	4.71	4.98	Apt (A) .43 Per (P) .40
low Per	6.25	3.83	5.09	5.06	4.54	5.42	4.56	4.84	SxA 1.26
M	5.61	4.73	4.50	4.95	4.88	5.29	5.11	5.09	SxP 1.99 AxP 1.07 SxAxP 1.20 MSe= .68
3. Creative-ness									
high Per	6.18	6.85	4.61	5.88	5.06	6.82	6.05	5.98	Sex (S) .13
normal Per	6.62	6.95	5.82	6.46	6.53	6.76	6.14	6.44	Apt (A) 2.39 Per (P) 1.98
low Per	7.19	6.39	6.30	6.63	6.85	7.25	6.56	6.88	SxA 1.01
M	6.66	6.73	5.58	6.32	6.15	6.95	6.25	6.45	SxP .04 AxP .53 SxAxP .47 MSe= .53
4. Social skills									
highPer	2.00	5.08	4.13	3.74	3.06	3.24	3.37	3.22	Sex (S) 1.98
normal Per	4.08	3.42	3.05	3.51	3.71	2.29	4.43	3.47	Apt (A) .18 Per (P) .00
low Per	4.44	3.22	4.13	3.93	3.15	3.17	2.67	2.99	SxA .54
M	3.50	3.91	3.77	3.73	3.31	2.89	3.49	3.23	SxP .54 AxP 1.91 SxAxP 1.70 MSe= .56
5. Social status									
high Per	6.73	6.69	4.78	6.07	4.69	6.76	5.89	5.78	Sex (S) 1.40
normal Per	4.94	6.47	4.55	5.75	6.35	5.10	6.36	5.94	Apt (A) 3.01* Per (P) .04
low Per	5.44	4.94	5.57	5.32	7.23	7.67	4.89	6.59	SxA .49
M	6.13	6.04	4.96	5.71	6.09	6.51	5.71	6.10	SxP 1.95 AxP .70 SxAxP 3.89** MSe= .50

Table 42 (cont.)

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
6.Kindness										
high Per	7.27	7.85	4.39	6.50	4.87	6.88	5.11	5.62	Sex (S)	.50
normal Per	6.69	6.84	5.59	6.38	5.76	7.76	5.50	6.34	Apt (A) Per (P)	5.41** .86
low Per	6.87	5.72	7.13	6.58	6.08	7.75	6.33	6.72	SxA	2.67
M	6.95	6.80	5.70	6.48	5.57	7.46	5.65	6.23	SxP AxP	.76 1.50
									SxAxP MSe=	1.15 .60
7.Independence										
high Per	8.73	11.54	8.61	9.62	8.85	9.47	6.12	8.82	Sex (S)	.02
normal Per	9.31	8.37	8.55	8.74	10.08	10.10	10.76	9.81	Apt (A) Per (P)	3.54* .22
low Per	9.31	9.67	7.78	8.92	7.76	9.86	9.58	8.87	SxA	1.16
M	9.12	9.86	8.31	9.09	8.15	10.31	9.03	9.16	SxP AxP	1.14 2.25
									SxAxP MSe=	.34 1.16
8.Religiousness										
high Per	5.82	7.69	5.83	6.45	6.75	8.18	6.68	6.87	Sex (S)	.44
normal Per	6.23	6.58	5.36	6.06	7.12	6.62	5.79	6.51	Apt (A) Per (P)	1.62 .76
low Per	7.06	4.83	5.78	5.89	8.00	5.25	4.67	5.97	SxA	.10
M	6.37	6.37	5.66	6.13	6.96	6.68	5.71	6.45	SxP AxP	.06 2.63*
									SxAxP MSe=	.32 1.04
9.Honesty										
high Per	6.73	12.46	8.17	9.12	7.06	9.71	7.95	8.24	Sex (S)	2.07
normal Per	7.69	9.05	7.27	8.01	9.24	11.05	7.36	9.21	Apt (A) Per (P)	10.19** 1.07
low Per	6.44	6.28	8.35	7.02	7.77	11.00	7.56	8.77	SxA	1.11
M	6.95	9.26	7.90	8.05	8.02	10.58	7.62	8.74	SxP AxP	2.78 1.76
									SxAxP MSe=	2.18 1.04
10.Total discrepancy										
high Per	53.91	70.54	48.70	57.71	46.62	63.12	56.74	55.49	Sex (S)	.08
normal Per	60.08	59.11	49.68	56.29	59.35	60.14	56.57	58.69	Apt (A) Per (P)	4.94** .19
low Per	60.06	49.50	55.78	55.12	58.00	62.58	49.56	56.71	SxA	.91
M	58.02	59.71	51.39	56.37	54.66	61.95	54.29	56.96	SxP AxP	.47 2.87*
									SxAxP MSe=	2.08 19.51

* $p < .05$
** $p < .01$

Table 43

Numerical Discrepancy Between Mothers Values and Fathers Values as a Function of Aptitude (Apt), Performance (Per), and Sex

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1. Intellectualism										
high Per	2.73	.62	1.52	1.62	-.19	-.41	-.89	-.49	Sex (S)	1.56
									Apt (A)	.12
normal Per	.38	.37	.05	.27	1.88	.48	1.86	1.41	Per (P)	1.61
low Per	2.56	1.72	2.35	2.21	.31	2.33	.89	1.18	SxA	.36
M	1.89	.90	1.31	1.37	.67	.80	.62	.69	SxP	3.18*
									AxP	.36
									SxAxP	.58
									MSe=	1.30
2. Academic achievement										
high Per	.27	.69	1.43	.80	.31	-1.41	-2.16	-1.09	Sex (S)	2.24
normal Per	1.62	1.26	-.09	.93	1.88	-.29	2.43	1.34	Apt (A)	1.30
									Per (P)	2.36
low Per	1.75	.72	.65	1.04	.85	.92	-.78	.33	SxA	.33
M	1.21	.89	.67	.92	1.01	-.26	-.17	.19	SxP	1.85
									AxP	.30
									SxAxP	1.74
									MSe=	1.07
3. Creativity										
high Per	2.00	1.46	.78	1.41	-1.56	.00	.37	-.39	Sex (S)	.49
normal Per	2.77	2.00	.27	1.68	2.41	-.10	1.57	1.29	Apt (A)	1.19
									Per (P)	2.72
low Per	2.44	2.28	-.39	1.44	2.85	2.42	2.33	2.53	SxA	2.23
M	2.74	1.91	.22	1.51	1.27	.77	1.42	1.14	SxP	2.53
									AxP	.82
									SxAxP	.38
									MSe=	1.25
4. Social skills										
high Per	1.09	2.77	1.61	1.82	-.19	.76	.00	.19	Sex (S)	1.53
									Apt (A)	.74
normal Per	-.23	.47	.14	.13	.88	.86	.86	.87	Per (P)	1.27
low Per	2.06	.78	2.22	1.69	-.08	1.67	1.33	.97	SxA	.13
M	.37	1.34	1.32	1.21	.21	1.09	.73	.68	SxP	2.56
									AxP	.41
									SxAxP	.71
									MSe=	.84
5. Social status										
high Per	1.82	.69	1.22	1.24	1.06	-.18	-1.37	-.16	Sex (S)	.90
normal Per	1.46	.89	..18	.85	.35	-.62	1.36	.36	Apt (A)	1.66
									Per (P)	.11
low Per	.56	.06	-.35	.09	1.23	-.83	1.33	.58	SxA	.49
M	1.28	.55	.35	.73	.88	-.54	.44	.25	SxP	1.24
									AxP	.31
									SxAxP	.87
									MSe=	1.08

Table 43 (cont.)

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
6.Kindness										
high Per	1.09	3.38	.83	1.77	1.37	-.53	-.26	.19	Sex (S)	3.18
									Apt (A)	1.66
normal Per	4.08	2.63	.05	2.25	1.76	.52	1.36	1.22	Per (P)	1.56
low Per	2.12	2.28	2.17	2.19	1.62	2.92	1.44	1.99	SxA	.81
									SxP	.58
M	2.43	2.76	1.02	2.07	1.59	.97	.85	1.13	AxP	.64
									SxAxP	1.46
7.Independence									MSe=	1.24
high Per	6.36	1.69	3.22	3.76	1.25	-3.00	2.21	.15	Sex (S)	2.84
									Apt (A)	1.48
normal Per	2.85	3.11	2.45	2.80	2.41	.57	2.00	1.66	Per (P)	1.75
low Per	3.81	3.22	1.78	2.94	3.77	6.25	2.11	4.04	SxA	.37
									SxP	3.62*
M	4.34	2.67	2.48	3.17	2.48	1.27	2.11	1.95	AxP	2.56*
									SxAxP	.83
									MSe=	2.30
8.Religousness										
high Per	1.82	.92	2.61	1.78	1.37	2.76	-.37	1.26	Sex (S)	.34
									Apt (A)	1.74
normal Per	.54	1.63	-.82	.45	1.24	1.57	1.93	1.58	Per (P)	.28
low Per	2.06	1.06	.74	1.29	4.62	2.08	-1.11	1.86	SxA	.65
									SxP	.52
M	1.47	1.20	.84	1.17	2.41	2.14	.15	1.56	AxP	.86
									SxAxP	1.26
									MSe=	2.04
9. Honesty										
high Per	2.00	3.23	2.17	2.46	1.06	-2.76	-1.95	-1.22	Sex (S)	.91
									Apt (A)	.81
normal Per	-2.00	.74	-.18	-.48	2.53	1.71	1.64	1.96	Per (P)	.02
low Per	.31	1.39	1.04	.91	-.23	2.83	-2.00	.20	SxA	1.54
									SxP	6.67**
M	.10	1.79	1.01	2.90	1.12	.66	-.77	.31	AxP	.89
									SxAxP	1.01
									MSe=	2.11
10.Total numerical discrepancy										
high Per	19.18	15.46	15.39	16.68	4.50	-4.76	-4.43	-1.56	Sex (S)	3.92*
									Apt (A)	2.09
normal Per	11.46	13.11	2.05	8.87	15.35	4.71	15.00	11.69	Per (P)	1.87
low Per	17.69	13.50	10.22	13.80	14.92	20.58	5.56	13.69	SxA	.15
									SxP	6.34*
M	16.11	14.02	9.22	13.12	11.59	6.84	5.38	7.94	AxP	.48
									SxAxP	1.26
									MSe=	30.78

3. Mothers of high-Per males and normal-Per females exceeded their husbands in the value attached to honesty to a greater extent than did mothers of males and females at other levels of Per. This result appears due primarily to differences in performance as a function of fathers' values considered independently (Table 39).

4. The degree to which mothers exceeded their husbands in responses summed over values was low among normal-Per males and high-Per females.

Significant relationships found in analyses of these data in no way paralleled those found in analyses of absolute discrepancies.

The hypothesis that between-parent differences in values would be related negatively to performance was supported only among students of low aptitude. Possibly the detrimental effects on performance of between-parent disagreement are most severe among students with low ability. It is nevertheless surprising that the relationship of this disagreement to performance among normal-Apt students was in the opposite direction to that expected. Students of low ability, who are unable to develop a consistent set of standards for self evaluation, may seek these standards in the social environment at college, resulting in a decrement in their performance; students of normal ability who are unable to develop such standards may turn to the academic environment, with a resulting increase in their performance. Students of high ability may have less need for a stable set of external standards, and furthermore may be more independent from their parents regardless of their values (p 101); they may therefore be relatively unaffected by between-parent disagreement. Further research is required before much weight is attached to this completely ad hoc interpretation.

While results of analyses of individual values generally paralleled results of analyses of total between-parent differences, the only value on which significant results were obtained was religiousness. While undue emphasis should not be attached to this result, it suggests that of the values considered in this study, between-parent differences in religiousness may have the greatest effect upon the behavior of children in the academic area.

Parents of students in the normal aptitude range disagreed with one another more than did parents of students with either higher or lower aptitude; this disagreement seemed to be focussed primarily on values pertaining to social relationships. It is difficult to attribute causality to these results. For example, one might speculate, that when parents disagree in the values they place upon socially-oriented behavior, the student is ambivalent as to the importance of this behavior; he may consequently be less likely either to engage primarily in social pursuits, (and, as a result, fail to develop intellectual skills), or to concentrate primarily upon developing intellectual skills at the expense of social goal attainment.

It is equally reasonable to assume that a student's manifest ability in intellectual areas is a cause and not a consequence of his parents' values. Both parents of children who have low academic aptitude may tend to minimize the importance of intellectual activity and may stress the importance of social goal attainment. Alternatively, both parents of manifestly intelligent children may encourage them to concentrate upon intellectual activity and de-emphasize the importance of social goals. When their children are in a position of marginality with respect to both intellectual and social abilities, parents may be more apt to disagree in the value they attach to behavior in these domains. The relative merits of these interpretations could not be determined in this study.

Analyses of numerical discrepancies indicated that academic performance was related negatively to the degree to which the same-sex parent exceeded the opposite-sex parent in the importance attached to independence. It might be expected that the same-sex parent would have the greatest influence upon their children's values. When this parent, relative to the opposite sex parent, places a high value upon conventionality, social approval, etc., this may lead the child to seek social rather than achievement goals and therefore may have a detrimental effect upon his performance. If this is true, however, it is curious that students' own values regarding social independence were not related to their performance (Table 37).

Alienation from the College Environment

Entering freshmen students whose values are similar to those of other students in the college environment may have less difficulty in adjusting to this new environment and therefore may be better able to apply themselves effectively in pursuit of academic goals. To test this hypothesis, the degree to which each student's values differed from those of other college students was calculated by computing the absolute discrepancy between his response to each item and the mean response to the item by other students of the same sex in the sample, and then summing these discrepancies over items. Discrepancy scores for individual values were also calculated and analyzed as a function of Apt, Per and sex. Results are shown in Table 44; the following relationships were significant:

Sex. Male students tended to be more discrepant from other males than were females from other females in their responses across values, and also in their responses to items pertaining to intellectualism, kindness, social skills, academic achievement, social status, and physical development.

Aptitude. 1. The mean discrepancy from same-sex students in the value placed upon academic achievement was related negatively to Apt.

2. The mean discrepancy from same-sex students in the value placed upon social status was less among high-Apt students than among low-Apt or normal-Apt students.

3. The total discrepancy from same-sex students in values was related negatively to Apt.

Performance. 1. Among low-Apt and normal-Apt males, the total discrepancy from same-sex students in values was least among normal performers; among high-Apt males, however, this discrepancy was greatest among normal performers. Among females, however, similar relationships did not occur. This discrepancy was greatest at high Per among low-Apt students, least at high Per among normal-Apt students, and least at normal Per among high-Apt students.

2. The discrepancy from same-sex students in the value placed upon intellectualism was related negatively to Per among males, but positively to Per among females.

Table 44

Absolute Discrepancy between Values of Students and Mean Values of Same-Sex Students in the College Population

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
1. Intellec-tualism										
high Per	7.56	5.92	5.68	6.39	6.59	5.72	5.41	5.91	Sex (S)	17.27**
normal Per	6.33	6.30	7.73	6.79	5.49	5.89	5.64	5.67	Apt (A)	1.74
									Per (P)	.14
low Per	8.35	7.86	6.76	7.66	5.73	5.07	4.39	5.06	SxA	.16
M	7.32	6.69	6.73	6.94	5.94	5.56	5.15	5.55	SxP	3.47*
									AxP	1.82
									SxAxP	.41
2. Academic achievement									MSe=	.51
high Per	10.74	8.54	7.24	8.84	8.03	6.49	8.30	7.60	Sex (S)	4.21*
normal Per	8.60	6.64	8.18	7.81	7.38	7.53	6.62	7.18	Apt (A)	4.19*
									Per (P)	1.43
low Per	8.66	8.72	7.17	8.19	8.41	7.97	7.10	7.83	SxA	.94
M	9.34	7.97	7.53	8.28	7.94	7.33	7.34	7.53	SxP	.51
									AxP	.99
									SxAxP	2.06
3. Creativity									MSe=	.59
high Per	6.59	7.93	6.08	6.87	7.12	5.60	6.77	6.49	Sex (S)	.26
normal Per	6.54	6.21	6.75	6.50	6.33	7.00	6.55	6.63	Apt (A)	.01
									Per (P)	3.27*
low Per	9.14	7.06	7.32	7.84	5.93	8.17	8.37	7.49	SxA	1.22
M	7.43	7.07	6.72	7.07	6.46	6.92	7.23	6.87	SxP	.18
									AxP	.13
									SxAxP	2.86*
4. Social skills									MSe=	.67
high Per	5.48	5.23	4.89	5.20	4.43	3.70	4.32	4.15	Sex (S)	28.17**
normal Per	4.84	5.13	4.43	4.80	3.84	3.93	3.44	3.74	Apt (A)	.21
									Per (P)	1.04
low Per	4.83	6.21	5.70	5.58	3.11	2.97	4.97	3.68	SxA	1.97
M	5.05	5.52	5.01	5.19	3.79	3.53	4.24	3.85	SxP	1.25
									AxP	2.04
									SxAxP	.60
5. Social status									MSe=	.29
high Per	6.20	5.57	4.99	5.59	5.85	3.98	5.06	4.96	Sex (S)	5.29*
normal Per	4.93	6.54	5.28	5.58	4.59	4.56	3.44	4.19	Apt (A)	3.42*
									Per (P)	1.58
low Per	5.50	6.67	4.35	5.50	5.58	5.92	5.06	5.52	SxA	1.81
M	5.54	6.26	4.93	5.56	5.34	4.49	4.52	4.89	SxP	1.97
									AxP	2.14
									SxAxP	.50
									MSe=	.37

Table 44 (cont.)

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
6.Kindness										
high Per	7.70	7.70	6.94	7.45	6.94	4.32	6.41	5.89	Sex (S)	38.54**
normal Per	7.80	6.28	7.58	7.22	5.30	5.49	3.88	4.89	Apt (A)	.33
									Per (P)	1.04
low Per	7.56	7.88	7.41	7.62	5.13	4.79	5.17	5.03	SxA	.19
M	7.69	7.28	7.31	7.45	5.79	4.87	5.15	5.27	SxP	.79
									AxP	.48
									SxAxP	2.14
7.Independence									MSe=	.54
high Per	7.85	8.52	5.92	7.43	7.16	7.05	8.96	7.72	Sex (S)	.70
normal Per	8.71	7.05	6.78	7.51	9.14	8.69	7.12	8.32	Apt (A)	2.06
									Per (P)	.51
low Per	7.90	8.59	5.79	7.43	7.66	6.74	7.76	7.39	SxA	2.97
M	8.16	8.15	6.16	7.46	7.99	7.49	7.95	7.81	SxP	.34
									AxP	.63
8. Religousness									SxAxP	1.67
									MSe=	.79
high Per	11.86	10.25	10.40	10.84	10.98	10.40	8.58	9.99	Sex (S)	.80
normal Per	10.12	9.23	8.53	9.29	8.40	10.35	9.57	9.44	Apt (A)	1.41
									Per (P)	3.44*
low Per	10.05	12.37	10.51	10.98	9.95	10.99	10.53	10.49	SxA	.34
M	10.68	10.62	9.81	10.37	9.78	10.58	9.56	9.97	SxP	.43
									AxP	1.34
9.HOnesty									SxAxP	1.00
									MSe=	.89
high Per	8.37	9.16	6.67	8.06	9.81	6.38	9.16	8.45	Sex (S)	.04
normal Per	7.89	8.29	8.62	8.27	7.75	8.62	8.40	8.26	Apt (A)	.65
									Per (P)	.00
low Per	8.86	9.93	6.91	8.57	8.40	7.94	7.36	7.90	SxA	2.02
M	8.37	9.13	7.40	8.29	8.65	7.65	8.31	8.20	SxP	.37
									AxP	1.09
10.Physical development									SxAxP	1.06
									MSe=	1.13
high Per	8.80	8.07	6.79	7.89	8.87	7.15	5.83	7.28	Sex (S)	3.91*
normal Per	7.66	8.52	8.18	8.12	7.79	6.85	5.67	6.77	Apt (A)	2.26
									Per (P)	.06
low Per	7.36	7.22	8.05	7.54	7.22	7.34	7.92	7.49	SxA	1.13
M	7.94	7.93	7.67	7.85	7.96	7.12	6.48	7.18	SxP	1.26
									AxP	2.71*
									SxAxP	.49
11. Total discrepancy									MSe=	.51
high Per	81.19	76.88	65.59	74.55	75.75	60.73	68.79	68.43	Sex (S)	21.82**
normal Per	73.42	70.20	72.09	71.90	66.00	68.89	60.32	65.07	Apt (A)	5.01**
									Per (P)	2.26
low Per	78.26	82.50	69.98	76.92	67.09	67.90	68.64	67.87	SxA	1.89
M	77.63	76.53	69.22	74.46	69.61	65.87	65.92	67.12	SxP	.31
									AxP	1.98
									SxAxP	2.86*
									MSe=	11.10

* $p < .05$
** $p < .01$

3. The discrepancy from same sex students in creativity was related negatively to Per. The significant Apt x Per x sex interaction indicated that the discrepancy from same-sex students in the value placed upon creativity was greater among low-Apt, low-Per male students than among male students at any other combination of Apt and Per. The discrepancy was related negatively to Per at low Apt and high Apt, but not at normal Apt. Among females, however, this discrpeancy was related positively to Per among low-Apt students.

4. The discrepancy from same-sex students in religiousness was lower among normal-Per students than among students either high or low in Per.

Discussion. The hypothesis that high-Per students would be relatively more similar to other students in their values must be rejected on the basis of these data. If the degree of dissimilarity between a student's values and those of other students reflects his social alienation from the college environment, it must be concluded that such alienation per se is not simply related to his academic performance.

Results pertaining to the total discrepancy of each student's values from those of other students were difficult to interpret. Male students of average ability or below, and female students of high ability, were more similar to other students if they were normal performers than if they were low or high performers. Had these relationships generalized to all combinations of sex and Apt, it might be concluded that students who were most representative of the college population in terms of their expressed values or attitudes also tended to be most representative in terms of their actual academic performance. However, this interpretation is inappropriate for high-Apt males and normal-Apt and low-Apt females. High-Apt, high-Per males were more similar to other students in their values than were male students at all other levels of Apt and Per. This would suggest, as hypothesized, that similarity in values provides a stability conducive to goal-seeking effectiveness. However, the fact that high-Apt, low-Per males were also relatively less discrepant from other students' values than were other groups suggests that this stability does not only manifest itself in academic areas; it may also lead to greater independence of the academic environment and therefore to less desire for academic goals.

Overachieving (low-Apt, high-Per) females were substantially more discrepant from the values of other females than were females at other levels of Apt and Per. If females are typically not achievement oriented, those who expend the additional effort necessary to exceed the performance level predicted from their aptitude scores may have values substantially different from those of the average college female, as results suggest.

Data pertaining to individual values, in particular those indicating interest in intellectual activity, were no less difficult to interpret. The degree of dissimilarity to other students with regard to both intellectualism and creativity was related negatively to Per among males. These data would support the original hypothesis that similarity in values facilitates academic performance. Among females a relationship similar to that among males occurred with regard to creativity, but the relationship between their performance and their dissimilarity to other students in intellectualism was positive. These data, at best, suggest that the hypothesis that similarity to other students in values facilitates effectiveness must be qualified so as to pertain only to values involving intellectual and creative interests, and possibly to pertain only to males.

Discrepancy indexes associated with academic achievement were unrelated to Per, but were related negatively to Apt. That is, high-Apt students were more similar to other students in the value they attached to academic achievement than were those of low Apt. This was also true with regard to the value placed upon social status. Both values reflect the importance attached to achievement, differing only in the domain (academic or social) in which it is manifested. Data in Table 36 show that high-Apt students are not necessarily higher in these values. The conclusion therefore seems justified that the values of high-Apt students in achievement-related areas are more representative of the values predominant among college students. One possible reason for this is that high-Apt students are more sophisticated in test-taking and are better able to predict what responses are most "appropriate" for college students.

Sex differences in discrepancy indexes indicate merely that males are more variable in their responses than are females, particularly in values reflecting academic and social interests.

General Conclusions and Evaluation

The failure for the results of this portion of the research to support hypotheses, and the general difficulty of interpreting relationships that did occur between the variables involved, indicates that much more work must be done to delineate clearly the effects of alienation and conflict upon academic effectiveness. It is difficult to determine whether the failure for hypotheses to be supported is due to theoretical or methodological inadequacies. For example, it was assumed that a discrepancy in values between parents would produce conflict or uncertainty in their children regarding these values; the validity of this assumption should be tested directly using a more fundamental index of children's conflict or uncertainty with regard to values on which their parents disagree. It is also possible that parental values, as measured in this study, are too far removed from their actual behavior to have much effect upon their children. At least, data indicate that particular areas of disagreement should be considered rather than general values independent of their content.

All measures used in this study relied upon actual values acknowledged by parents, other students, etc.. Parental disagreement, and differences between students and others in the college environment may not have an appreciable effect upon behavior unless students are aware of these differences. A better approach to investigating the issues raised may have been to determine the degree to which students themselves believe that their parents disagree with one another, and the degree to which they believe that their own values differ either from their parents or from other students.

In short, although the results obtained during these stages of the research were generally negative, the ambiguities underlying the measures used and the assumptions pertaining to them prevent clear conclusions from being drawn regarding the validity of the hypotheses considered.

6. Self-Evaluations and Parental Evaluations

Hypotheses tested during the last section were suggested by results obtained during Phase 2 which indicated that self-acceptance and parents' acceptance were related positively to performance, and that the discrepancy between parents' evaluations of their child decreased with the child's performance. A partial replication of these findings was attempted during the third phase of the research.

In this phase, an index of the discrepancy between the evaluation of the student as he feels he is and the evaluation of him as he would be ideally was obtained by summing the absolute difference between "actual" ratings and "ideal" ratings along 20 trait dimensions (Appendix J). This index of actual-ideal discrepancy is similar but not conceptually identical to acceptance as it was measured during Phase 2; persons may often see themselves as falling substantially short of their ideal, but nevertheless may accept themselves as they are.

Between-parent differences in their descriptions of their child, and also in their estimates of how they would like him to be ideally, were calculated in the manner described previously (p. 96).

Results

Actual-ideal discrepancies calculated from both students' evaluations and parents' evaluations, are shown in Table 45 as a function of Apt, Per and sex. Between-parent differences in the evaluations of their child, both as he actually is and as they would like him to be ideally, are also presented.

The discrepancy between students' self-ratings and the ratings of themselves as they would like to be ideally was unrelated to their performance. The difference between each parents evaluation of their child and the "ideal" child decreased with Per as expected; in the case of fathers' ratings, however, this relationship was contingent upon sex and aptitude. Between-parent differences in their evaluation of their child, and also in their estimates of how they would like him to be ideally, were unrelated to Per.

The results obtained during Phase 2 were therefore not replicated. While the failure for students' actual-ideal discrepancy to be related to performance in the manner in which acceptance was related (Table) could be attributed to conceptual and methodological differences in the two measures involved, the failure for between-parent differences to be related negatively to performance is not so easily disregarded. Disagreement between parents in the criteria used to evaluate their child was expected to prevent him from developing stable standards for self-evaluation that would allow him to pursue academic goal effectively in an unfamiliar environment away from home (p. 96). Possibly this effect is more pronounced when students live away from home while attending college, as was the case in the earlier study, than when they commute. Nevertheless, the failure to replicate earlier findings places some doubt upon both their generality and their reliability.

Table 45

Self Evaluations, Parents' Evaluations and Between Parent Discrepancy in Evaluations as a Function of Apt, Per and Sex

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1. Actual-ideal discrepancy										
a. Self evaluation										
high Per	22.4	23.4	19.0	21.6	20.7	21.8	24.1	22.2	Sex (S)	1.96
normal Per	22.5	21.8	18.5	20.8	21.5	22.4	22.7	22.2	Apt (A)	.89
low Per	21.6	23.4	19.7	21.5	24.3	23.4	23.2	23.6	Per (P)	.43
M	22.1	22.9	18.9	21.3	22.2	22.5	23.3	22.7	SxA	2.39
									SxP	.19
									AxP	.09
									SxAxP	.33
									MSe=	4.32
b. Father's evaluation										
high Per	10.1	18.0	12.2	13.4	14.2	11.5	12.2	12.6	Sex (S)	6.41*
normal Per	16.9	13.7	13.5	14.7	13.3	13.1	12.4	12.9	Apt (A)	.71
low Per	21.0	16.1	17.4	18.1	12.2	15.5	12.9	13.5	Per (P)	3.10*
M	16.0	15.9	14.4	15.4	13.2	13.4	12.4	13.0	SxA	.07
									SxP	1.47
									AxP	.63
									SxAxP	2.93*
									MSe=	4.06
c. Mother's evaluation										
high Per	9.3	14.5	12.0	11.9	11.9	9.8	12.0	11.2	Sex (S)	5.02*
normal Per	13.2	13.5	11.4	12.7	14.3	10.3	9.9	11.5	Apt (A)	1.40
low Per	22.1	15.4	14.5	17.3	12.9	13.5	12.0	12.8	Per (P)	5.09**
M	14.9	14.5	12.6	14.0	13.0	11.2	11.3	11.8	SxA	1.59
									SxP	1.21
									AxP	.37
									SxAxP	1.92
									MSe=	4.18
2. Between-parent discrepancy										
a. Actual										
high Per	10.6	14.5	9.9	11.6	7.3	11.8	12.6	10.5	Sex (S)	.01
normal Per	11.5	12.4	13.1	12.3	12.6	12.2	13.6	12.8	Apt (A)	1.51
low Per	10.3	11.2	13.1	11.5	13.3	13.6	10.1	12.3	Per (P)	1.12
M	10.8	12.7	12.0	11.8	11.1	12.5	12.1	11.9	SxA	.03
									SxP	.53
									AxP	.94
									SxAxP	1.86
									MSe=	2.94

Table 45 (cont.)

	Males				Females			
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	M	
b. Ideal								
high Per	10.1	14.9	9.2	11.4	6.7	8.9	9.6	8.4
normal Per	10.4	7.6	10.5	9.5	6.9	8.9	8.2	8.0
low Per	8.4	9.2	9.4	9.0	8.9	9.4	6.5	8.3
M	9.6	10.5	9.7	9.9	7.5	9.0	8.0	8.2

F-ratios	
Sex (S)	5.93*
Apt (A)	1.07
Per (P)	1.32
SxA	.08
SxP	.88
AxP	1.24
SxAxP	2.16
MSe=	2.24

* $p < .05$
** $p < .01$

7. Parental Child-rearing Factors

A possible reason for the lack of relationship between child-rearing characteristics and academic performance during the second phase of the study (Table 30) was that students who were living away from home were less influenced by their parents. That is, it seemed possible that authoritarian child rearing would lead to increased performance only when students were in direct contact with their parents and more subjected to their authoritarian practices (Drews & Teahan,1957). Since the subjects in this phase of the study were living at home while attending college, this possibility was investigated.

In this phase, the child-rearing variables used differed from those used in the earlier research. They were defined on the basis of a factor analysis performed as part of a different study (Wyer, 1965). Identical questions were asked of both mothers and fathers (Appendix K). Factors included: authoritarian punitive control (in the mothers form, items 1,7,13, 15,19 and 25; see Appendix K); encouragement of achievement (items 2,8,14,20 and 26); overprotectiveness (items 5,11,17 and 23), encouragement of communication (items 4,10, 16 (reverse scored), 22 (reverse scored), and 27 (reverse scored)); and maintenance of control (items 12, 18, 23, and 24).

Results

Mothers' and fathers' scores on each child-rearing factor as a function of academic variables and sex are shown in Table 45. Only two relationships involving performance reached significance; maintenance of control by mothers was related positively to Per; maintenance of control by fathers was related positively to Per among males, and was curvilinearly related to Per among females. Although these results are consistent with the hypothesis that authoritarian child-rearing practices develop rigid internal standards that are conducive to academic effectiveness, they are not strong enough for this hypothesis to be considered supported. It seems clear that child-rearing attitudes of parents are not major predictors of the academic performance of college students.

Table 46

Child Rearing Indexes as a Function of Apt, Per and Sex

	Males				Females				F-ratios	
	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
1. Authoritarian, punitive control										
a. Mother										
high Per	5.73	4.46	3.78	4.66	5.07	5.47	5.53	5.35	Sex (S)	.20
normal Per	5.43	3.11	6.41	4.98	3.81	5.00	4.79	4.53	Apt (A) Per (P)	.25 .16
low Per	6.06	5.00	4.27	5.11	4.15	3.83	4.00	4.00	SxA	.79
M	5,74	4.19	4.82	4.92	4.34	4.77	4.77	4.63	SxP AxP	.65 .40
									SxAxP	.42
b. Father									MSe=	1.92
high Per	5.09	6.77	4.09	5.30	5.27	4.53	5.79	5.20	Sex (S)	.03
normal Per	3.43	4.63	5.45	4.50	3.94	4.29	5.86	4.70	Apt (A) Per (P)	.10 .29
low Per	4.49	6.67	4.45	5.20	6.15	3.17	4.87	4.70	SxA	1.79
M	4.30	6.00	4.70	5.00	5.10	4.00	5.50	4.90	SxP AxP	.07 .49
									SxAxP	.38
2. Encouragement to achieve									MSe=	2.26
a. Mother										
high Per	12.27	13.54	12.70	12.84	14.20	13.00	13.26	13.45	Sex (S)	.78
normal Per	14.07	13.58	13.77	13.81	12.62	13.57	13.71	13.30	Apt (A) Per (P)	.08 1.20
low Per	12.81	12.83	12.59	12.75	13.08	13.33	13.62	13.35	SxA	1.79
M	13.05	13.32	13.02	13.13	13.30	13.30	13.53	13.38	SxP AxP	.16 .29
									SxAxP	1.50
b. Father									MSe=	.36
high Per	11.18	12.15	12.30	11.88	12.67	11.59	13.37	12.54	Sex (S)	.59
normal Per	13.00	12.74	13.50	13.08	12.19	11.95	12.86	12.33	Apt (A) Per (P)	1.95 2.01
low Per	11.19	11.89	11.45	11.51	12.38	11.75	12.87	12.34	SxA	2.40
M	11.79	12.26	21.42	12.16	12.41	11.76	13.03	12.40	SxP AxP	.14 1.33
									SxAxP	.35
									MSe=	.47

Table 46 (cont.)

	Males				Females				F-ratios	
	low Apt	nor-mal Apt	high Apt	M	low Apt	nor-mal Apt	high Apt	M		
3. Overprotectiveness										
a. Mother										
high Per	- .27	-4.31	-2.09	-2.22	-4.47	-2.53	-5.37	-4.12	Sex (S)	2.57
normal Per	-2.79	-3.42	-2.50	-2.90	-4.19	-2.71	-3.29	-3.39	Apt (A)	.18
									Per (P)	.46
low Per	-3.00	-4.78	-3.23	-3.67	-4.54	-1.67	-4.75	-3.65	SxA	1.34
M	-2.02	-4.17	-2.60	-2.93	-4.39	-2.30	-4.47	-3.72	SxP	.60
									AxP	7.33**
									SxAxP	.60
b. Father									MSe=	1.10
high Per	- .73	-1.31	-2.00	-1.34	-4.00	-2.24	-4.42	-3.55	Sex (S)	1.37
normal Per	- .57	-3.05	-3.00	-2.21	-1.25	- .57	-2.71	-1.51	Apt (A)	1.20
									Per (P)	.38
low Per	-2.56	-1.44	-1.45	-1.82	-2.54	-1.58	-2.75	-2.29	SxA	2.24
M	-1.29	-1.93	-2.15	-1.79	-2.59	-1.46	-3.29	-2.45	SxP	.62
									AxP	1.01
									SxAxP	.29
4. Encouragement of communication									MSe=	1.43
a. Mother										
high Per	9.00	7.62	8.74	8.45	8.40	8.59	7.84	8.28	Sex (S)	.01
normal Per	9.93	9.53	9.05	9.50	7.56	7.76	9.50	8.27	Apt(A)	.11
									Per (P)	1.95
low Per	7.75	9.72	9.05	8.84	10.77	9.50	10.12	10.13	SxA	2.48
M	8.89	8.95	8.94	8.93	8.91	8.62	9.16	8.89	SxP	.20
									AxP	.12
									SxAxP	1.46
b. Father									MSe=	.97
high Per	5.36	5.46	6.91	5.91	6.47	7.65	7.58	7.23	Sex (S)	.53
normal Per	7.07	7.21	8.77	7.68	5.87	7.76	5.71	6.45	Apt (A)	1.73
									Per(P)	1.16
low Per	6.37	7.28	7.32	6.99	7.31	9.33	7.25	7.96	SxA	2.72
M	6.27	6.65	7.67	6.86	6.55	8.25	6.85	7.21	SxP	.35
									AxP	2.08
									SxAxP	.14
									MSe=	1.06

Table 46 (cont.)

	Males				Females				F-ratios	
5. Maintenance of control	low Apt	normal Apt	high Apt	M	low Apt	normal Apt	high Apt	M		
a. Mother										
high Per	3.45	-2.23	- .87	.12	-2.47	-2.59	-4.16	-3.07	Sex (S)	6.81*
normal Per	.00	-1.26	- .41	- .56	- .87	-1.52	.21	- .73	Apt (A)	1.58
									Per (P)	5.46*
low Per	-1.62	-2.17	-3.27	-2.69	-4.69	-1.50	-6.25	-4.15	SxA	1.76
M	.61	-1.89	-1.52	- .93	-2.68	-1.87	-3.39	-2.65	SxP	2.04
									AxP	2.11
									SxAxP	.59
b. Father									MSe=	1.95
high Per	3.64	-1.08	- .61	.65	-2.87	-3.24	-3.00	-3.03	Sex (S)	6.48*
normal Per	.21	-1.74	-1.95	-1.16	.44	-1.38	- .43	- .46	Apt (A)	2.20
									Per (P)	1.51
low Per	- .19	- .72	-2.45	-1.13	-3.69	-2.58	-3.50	-3.26	SxA	3.67*
M	1.22	-1.18	-1.67	- .54	-2.04	-2.40	-2.31	-2.25	SxP	.57
									AxP	1.41
									SxAxP	.29
									MSe=	2.02

* $p < .05$
** $p < .01$

CHAPTER V

PHASE 3B: BEHAVIORAL CORRELATES OF ACADEMIC ACHIEVEMENT

Research on characteristics associated with academic achievement have typically relied upon questionnaire measures; few studies have attempted to infer factors underlying academic effectiveness from behavior manifested in experimentally controlled situations. In this phase of the research, an attempt was made to test certain implications of earlier phases by investigating the behavior typical of representatives of different levels of academic aptitude and performance in a number of achievement and social situations.

In one study, the conformity of subjects to group judgments of physical stimuli was measured under each of two conditions. In the first condition, performance on the judgmental task was associated with achievement potential. In the second, the importance of good performance was deemphasized, but an attempt was made to increase the desirability of effective social relationships with other group members.

In the second study, an attempt was made to determine the extent to which students at different levels of aptitude and performance prefer to work for goals in cooperation with other persons rather than independently under conditions in which the attainment of individual and group goals were equally likely.

1. Conformity due to Informational and Normative Influence

Although studies have generally found support for the hypothesis that social dependence and conformity are related negatively to academic achievement, this research has been difficult to interpret for at least three reasons. First, academic performance has frequently been measured without controlling for academic aptitude (c.f. Gilmore, 1951). Second, conformity has typically been inferred either from subjects' acknowledgement of this behavior on questionnaires (Weigand, 1953; Merrill & Murphy, 1959) or from projective techniques (Burgess, 1956); the degree to which such measures reflect behavior in actual social situations is unknown. Third, little attention has been given to situational differences in the motives for conformity.

The research performed during this phase of the study was designed to help clarify these issues. Representatives of four combinations of academic aptitude and academic performance made judgments of physical stimuli before and after exposure to fictitious group norms. Conformity to group estimates was analyzed in terms of aptitude, performance and sex under each of two incentive conditions. In one condition, performance on the task was associated with achievement potential and subjects were told that their scores would be made part of their academic records. In the second condition, the importance of the task was deemphasized; however, an attempt was made to increase the value attached to favorable social relationships among group members. This manipulation was particularly relevant in light of earlier research indicating possibly different effects of achievement and social motives upon performance among males and females.

A student's academic aptitude, as the term is used in this study, is assumed to indicate his mastery of general intellectual skills before entering college, and therefore to reflect the level of performance he should attain with an average amount of effort. Overachievers and underachievers are considered to be students whose performance exceeds or falls short of the level they would be predicted to attain with an average amount of effort.

Deutsch & Gerard (1955) have identified two types of social influence: informational influence, which occurs because the subject wishes to improve his performance and believes that others' opinions are more accurate than his own, and normative influence, which occurs because the subject is unwilling to appear deviant from the opinions of other persons, regardless of the credibility. Other investigators (Asch, 1951; Kelman, 1951; Becker, Lerner & Carroll, 1964; Wyer, 1966) have made similar distinctions.

Informational influence should generally be high when an incentive to perform well on the judgmental task is provided. Two conditions are necessary for this type of influence to be effective. First, personal achievement on the task must be important to the subject, and second, the subject must have reason to believe that judgments of the source are more likely to be correct than his own. If these assumptions are correct, the conformity of persons at different levels of academic aptitude and performance should allow inferences to be made concerning their desire to perform well and also their tendency to rely upon others for information in achievement-related activity.

Students who either have high intellectual ability or who have performed well in college may be more confident in achievement-related activities because of their previous success in these activities; they therefore may tend to believe that peer's judgments are no more likely to be accurate than their own. To this extent, conformity when incentive to perform well is provided should be greatest among students who have the most reason to believe that their own judgments are inferior to those of other group members; that is, among low performers of low ability.

The effects of informational influence upon underachievers and overachievers were of particular interest. Low performers of high ability were assumed to devote less effort to the pursuit of academic goals than is typical of college students. Such students may be confident of their abilities in achievement situations because of their high measured aptitude. However, they may attach little importance to demonstrating these abilities, or may even actively avoid doing so. In either case, their conformity due to informational influence should be low. High performers at low ability, who are assumed to exert more effort than the average student in academic goal seeking, may have a high desire to achieve. However, whether or not they typically rely upon other persons for assistance in attaining achievement goals, and therefore the degree to which they would be expected to conform due to informational influence, was unclear.

Two conditions appear necessary for normative influence to occur. First, the subject must have some interest in maintaining favorable social relationships with other group members. Second, he must believe that the quality of these relationships may be affected by his conformity. Wyer (1966) found that normative influence was high only when subjects were told that they were generally rejected by group members they liked; subjects who were told they were accepted by persons to whom they were attracted, and therefore given reason to believe that their group status was secure, conformed no more than subjects who disliked other group members. Similar relationships involving group acceptance have been reported elsewhere (Dittes & Kelley, 1956; Harvey & Consalvi, 1960).

These findings have implications for the relationships of academic variables to conformity due to normative influence. If, as had been hypothesized in earlier phases of the research, academic achievement-related activity is believed by males to be detrimental to their social goal attainment, then high performing males, who presumably manifest this behavior, should be more uncertain of their social acceptance than low performers, and therefore should be relatively more susceptible to normative influence when their attraction to the group is high. On the other hand, if female students typically believe that academic achievement often facilitates their attainment of social goals, then high performers should have greater confidence in their peer group acceptance, and therefore should be less likely to conform due to normative influence.

It should be noted that similar predictions could be made based upon a totally different line of reasoning. Specifically, susceptibility to normative influence in experimental situations may indicate a more general tendency to conform to the behavior patterns typical of one's sex-defined social role. Role-prescribed behavior may be academic achievement-oriented in the case of males but nonachievement-oriented in the case of females (p. 5). A positive relationship of academic performance and conformity among males, but a negative relationship between these variables among females, might also be predicted based upon these assumptions.

Method

Subjects were selected from second quarter freshmen at the University of Illinois at Chicago Circle. They comprised a subset of the subjects used in the research described in the previous chapter. Measures of Apt (composite American College Testing Service college entrance examination score) and Per (first quarter grade point average) were each converted to z-scores and subjects placed into four combinations of Apt and Per according to the following criteria:

1. High Apt, high Per -- z-scores of greater than .50 for both Apt and Per, and an absolute difference between Apt and Per z-scores of less than .30.

2. Low Apt, low Per--z-scores of less than -.50 for both Apt and Per, and an absolute difference between Apt and Per z-scores of less than .30.

3. High Apt, low Per--An Apt z-score of greater than .50, a Per z-score of less than -.50, and a difference between Apt and Per z-scores of greater than 1.30.

4. Low Apt, high Per--An Apt z-score of less than -.50, a Per z-score of greater than .50, and a difference between Per and Apt z-scores of greater than 1.30.

Sixteen males and sixteen females were selected at each of the four combinations of Apt and Per and recruited for the experiment. They were each paid $1 for their services.

Sixteen groups of from seven to ten subjects each were constructed. Each group was homogeneous with respect to sex. Groups were arranged so that eight males and eight females representing each of the four combinations of Apt and Per would make estimates of the number of dots presented on slides under each of the two incentive conditions described below. Conformity under each condition was defined as the percent increase in estimates after exposure to fictitious group norms.

Manipulation of Incentive

Achievement incentive. To provide an incentive to perform well, accuracy on the judgmental task was associated with competence in achievement-related activity. Subjects were introduced to the task with the following instructions:

> This study is part of some important research sponsored by the Federal Government. We are investigating factors that affect achievement both in college and in later life. Knowledge of these factors when persons are in college may help us to predict how successful they will be later on. One characteristic we think may contribute to success is the ability to make judgments rapidly and accurately. Previous research indicates that persons who do well on the task you are about to perform are often able to make quick and accurate decisions under pressure, while those who perform poorly may not be as able to be counted upon when quick decisions are required. The Office of Admissions and Records has in fact asked that your scores on this task be made part of your permanent record.

Affiliation incentive. To construct a situation conducive to normative influence, the importance of the task was minimized. Furthermore, since group attraction seemed to be a necessary condition for this influence to be effective (Wyer, 1966), an attempt was made to increase this attraction. As part of an earlier study, all subjects had been administered a questionnaire dealing with attitudes and values. To increase group attraction, reference was made to this questionnaire:

> The study you are about to participate in is part of some research sponsored by the government. By the way, you may recall that at the deans' meetings this past fall each of you was asked to fill out a questionnaire dealing with general attitudes and values. In selecting students to take part in this subsequent study, we attempted to group persons whose values were similar to one another and therefore should be able to get along well together. In this particular group we were especially fortunate. The values of each of you were found to be very similar to those of others in the group. This means that, although you may not know one another at the present time, if you did you would probably find that you would get along very well together.
>
> The first thing I would like you to do this afternoon is to estimate the number of black dots presented on each of a set of slides. Since this is the first time we have used this task, we are really interested only in determining whether it will be useful in other experiments we are performing.

Assessment of Conformity

A procedure similar to that described by Wyer (1966) was used. Subjects in each experimental condition were asked to estimate the number of randomly arranged dots presented on each of 10 slides projected sequentially on a screen for 1.5 seconds each. About 5 seconds between presentations of successive slides were allowed for subjects to record estimates. A trial consisted of one presentation of the 10 slides. The order of presentation was the same for each of two trials prior to exposure to fictitious group norms and one trial following exposure to these norms. The number of dots on each slide, in order of their presentation, was 20, 37, 28, 40, 32, 20, 37, 28, 40 and 32. Estimates on Trials 1 and 2 were recorded on sheets consisting of two columns of blanks, one column for each trial.

After instructions designed to induce differences in incentive, subjects were told the nature of the slides to be presented and that these slides would be shown for only a short period of time. They were told that after each slide was presented they should record their estimates on their answer sheets.

When all 10 slides had been presented, subjects were asked to make new estimates, as their "accuracy may improve with practice". They were told that before they were shown each slide they should note the number of dots they had estimated during Trial 1 and then, when the slide was presented, determine whether their first estimate was correct or if they should change their estimate. Two trials were used to minimize the degree to which change after exposure to group estimates could be attributable to factors other than this influence.

Following Trial 2, answer sheets were collected and subjects given an interpolated task. During this period new answer sheets were prepared. For each subject, the estimates he had made during Trial 2 were copied by the experimenter in the first column of the answer sheet. In the second column, the experimenter recorded fictitious "group averages" which were prepared as follows: For each of slides 1, 4, 7, 8 and 10, the "average" deviated from the subject's second estimate for that slide by one dot. For each of slides 2, 3, 5, 6, and 9, the "average" exceeded the subject's second estimate for that slide by 30%.

Subjects were then provided with appropriate answer sheets and given the following instructions:

> Now I would like you to make some more estimates of the number of dots on the slides I showed you before. Although I cannot tell you exactly how well you performed the first time, I can give you some idea of how close each of your guesses was to what other persons in the group guessed. In the first column of your answer sheet I have written your last estimate of the number of dots on each slide. Beside each of these, in the second column, I have written about the number of dots which most of the other persons in the group guessed were on the slide. Although neither your guess nor others' guesses may be the actual number of dots on the slides, in this way you can see how close you were to what others guessed. In addition to these instructions, subjects run under Affiliation incentive conditions were told that, after they made their judgments on this trial, their estimates would be written on the board so they could be compared with those made by other members. This additional instruction was expected to increase the magnitude of differences in susceptibility to normative influence.

Subjects were then told that before each slide was shown they should note both the number of dots they had guessed during Trial 2 and the number that others in the group guessed; then when the slide was shown, they should determine whether their last estimate was correct or if they should change their estimate.

After the experiment, subjects run under Achievement incentive conditions were informed that the information concerning the importance of the task was false. No attempt was made to debrief subjects run under Affiliation conditions.

Scoring. Conformity was defined as the per cent increase in estimates for slides 2, 3, 5, 6, and 9 from Trial 2 to Trial 3. It was determined for each subject by summing the difference between his estimates for these slides during Trial 2 and his estimates during Trial 3, and then dividing by the total number of dots he estimated were on these slides during Trial 2.

Results

Conformity under Achievement incentive conditions, as a function of aptitude (Apt), performance (Per) and sex, is shown in Table 47-1. One low-Apt, high-Per male did not show up for the experiment; eight representatives of each other combination of sex, Apt and Per participated as scheduled. An analysis of variance of these data, performed using an unweighted mean approximation procedure for unequal cell frequencies (Winer, 1962), is summarized beside the table.

Simple effects analyses of the Apt x Per interaction indicated that conformity was related positively to performance among high aptitude students ($F=4.82$, $p<.05$) but was related nonsignificantly negatively to performance among students of low ability ($F=2.11$, n.s.). As expected, low-Apt, low-Per students conformed more under these conditions ($M=10.8$) than did the residual of subjects not fitting this description ($M_{res} = 7.4$, $F=5.67$; $p<.05$). Also as expected, high-Apt, low-Per subjects (under achievers) conformed less ($M=5.1$) than low-Apt, low-Per subjects ($F=10.38$; $p<.01$), high-Apt, high-Per subjects ($F=4.82$, $p<.05$) and low-Apt, high-Per subjects ($F=3.02$, $p<.10$), and differed significantly from subjects in these three categories combined ($M_{res} = 9.3$, $F=8.85$; $p<.01$). These relationships were similar among both males and females.

Conformity under Affiliation incentive conditions, as a function of Apt, Per and sex is shown in Table 47-2. One low-Apt, low-Per male and one low-Apt, high-Per male did not participate; other cells contain eight subjects each. An analysis of variance summary of these data is presented in Table 4.

The relationships of aptitude and performance to conformity under these conditions appeared to be additive but were both contingent upon sex. Simple effects analyses of the significant interactions involving these variables indicated conformity was related positively to Apt among males ($F=4.72$, $p<.05$) but was related nonsignificantly negatively to Apt among females ($F=.72$); conformity was related nonsignificantly positively to Per among males ($F=.60$) but significantly negatively to Per among females ($F=4.04$; $p<.05$). Conformity was greater among high-Apt, high-Per males ($M=16.00$) than among males not fitting this description ($M_{res} =9.28$; $F=6.93$; $p<.01$) but was less among high-Apt, high-Per females ($M=4.83$) than among females at other combinations of Apt and Per ($M_{res} = 9.62$; $F=3.44$; $p<.10$).

Conformity due to normative influence was hypothesized to increase with Per among males but to decrease with Per among females. Only the second portion of this hypothesis was strongly supported. Data suggest that academic aptitude rather than performance was the primary factor affecting conformity among males, while performance, but not aptitude, was primarily associated with conformity among females.

Discussion

The results reported here raise serious doubt as to the validity of the general conclusion, based on questionnaire measures of dependence, that high academic performers are more socially independent than lower performers. As expected, the relationship of conformity to

Table 47

Conformity under Achievement and Affiliation Incentive Conditions as a Function of Attitude (Apt), Performance (Per) and Sex

	Males			Females			F-ratios	
	low Per	high Per	M	low Per	high Per	M		
1. Achievement incentive								
high Apt	4.97	8.70	6.83	5.27	9.30	7.28	Sex (S)	2.09
							Apt (A)	3.74
low Apt	10.38	5.41	7.89	11.14	10.97	11.06	Per (P)	.27
							SxA	1.18
M	7.67	7.05	7.36	8.21	10.14	9.17	SxP	1.05
							AxP	6.67*
							SxAxP	.80
2. Affiliation incentive							MSe=	3.12
high Apt	10.68	16.00	13.34	9.35	4.83	7.09	Sex (S)	2.65
							Apt (A)	.44
low Apt	8.84	8.34	8.59	11.92	7.58	9.75	Per (P)	.42
							SxA	5.62*
M	9.76	12.17	10.97	10.64	6.20	8.42	SxP	4.78*
							AxP	.81
							SxAxP	.92
							MSe=	4.88

* $p < .05$

performance was highly contingent upon the type of incentive provided, the level of general ability of students at different performance levels, and the sex of these students. While high performers of high ability appeared to be somewhat more independent than low performers of low ability under conditions in which their personal achievement was being evaluated, they were more conforming under these conditions than were low performers of high ability. Furthermore, under conditions in which personal achievement was not a factor, the degree of conformity of high ability, high performing students was highly dependent upon their sex.

The low conformity of underachievers when incentive to perform well was provided supports the view that these students place little value upon personal achievement and therefore have little interest in conforming merely in order to improve their performance. This finding could also indicate that these students are generally rebellious and resist social influence under all conditions. However, since underachievers were not particularly low in conformity under Affiliation incentive conditions, the first of these two interpretations seems the more appropriate. A third interpretation is worth considering, however. Underachievers may differ from high performers of high ability in that they prefer not to rely upon others in achievement-related activity. The merits of this interpretation are explored in the research described in the next section.

As expected, low performers of low aptitude were relatively high in conformity under Achievement incentive conditions. However, only females of this description were substantially conforming when affiliation incentive was provided. While low ability, low performing males were highly susceptible to informational influence in this study, presumably because of their previous history of failure in academic achievement-related activity, they are apparently not particularly influenceable when personal achievement is not a factor (Table 3). Low performing females of low aptitude may be uncertain of both their competence in achievement situations and their peer group acceptance; this would be consistent with the assumption that females believe academic competence and social goal attainment to be positively related.

High performing students of high ability were fairly high in their conformity to informational influence. These students, despite both ability in achievement-related areas and actual achievement in these areas, may conform more than low performers of high ability either as a result of greater desire to perform well in achievement tasks or, as speculated above, merely because of their greater willingness to rely upon others in achievement-related activity.

The relationship of aptitude to conformity under Affiliation incentive conditions, although it was not predicted, is not surprising. General intellectual ability may be manifested in ways other than through academic performance and therefore may often have similar effects upon social goal attainment. It is interesting that among males, conformity is more strongly related to aptitude than to performance. Possibly it is not the attainment of good grades per se but rather the appearance of being intellectually oriented in social situations outside the classroom that is detrimental to peer group acceptance among males. Among females, on the other hand, good grades appear to increase confidence in their social acceptance, while intellectual ability independent of performance does not.

Females may be rewarded socially for receiving good grades but not for appearing intelligent or intellectual in their relations with other persons. It may be noted that, if conformity to normative influence reflects uncertainty about one's social acceptance, then general intellectual ability appears to be more detrimental to (or less facilitative of) effective social relationships than does actual academic performance among both males and females.

As noted previously (p.170), other interpretations than the one given above should be considered. For example, susceptibility to normative influence in experimental settings may be pronounced among students who typically adopt normative behavior pertinent to their sex-defined social role; that is, among low performing females and high performing males. The relationships involving aptitude would not be so easily explained, however, unless it is assumed that a student's measured aptitude reflects primarily the extent to which he has engaged in intellectual activity in the past.

While overachievers were expected to attach much importance to performing well in achievement-related activity, it was unclear whether they would consider others' judgments to be more accurate than their own and therefore would rely upon these judgments in order to perform well. Data collapsed across sex indicated that high performers of low ability did not substantially differ in conformity from students whose performance was commensurate with their ability level (Table 47-1). It should be noted, however, that overachieving males were nearly as low in conformity as underachieving males under Achievement incentive conditions ($M=5.41$), while overachieving females manifested relatively high conformity under these conditions ($M=10.97$). The difference between these two groups was significant ($F=4.95$; $p<.05$; $MSe=3.12$). While the absence of a significant triple interaction of Apt, Per and sex prevents much weight from being attached to the conclusions drawn from these results, it may be worth speculating that males who perform better than their measured ability would predict do not use the opinions of peers as criteria of high quality performance; these students may typically succeed in achievement-related activity without depending upon others for help. Overachieving females on the other hand, may tend to depend upon others for assistance in achievement-related activity. Their success could in fact be partially attributable to a tendency to seek and receive help from others whom they believe to be more competent than themselves.

One qualification should be made in conclusions drawn from the results of this study. In all cases, the source of influence was of the same sex as the subject. Several studies suggest that conformity is substantially affected by the sex of the source as well as by the sex of the subject. For example, subjects of both sexes may judge males to be more competent than females in achievement tasks (Bennett & Cohen, 1959; Rosenblith, 1959), and therefore may be more susceptible to informational influence from male sources than from female sources. Furthermore, Weiss (1961) found that females, when engaging in achievement-related activity, attempt to appear less competent than males but not other females. It is conceivable that males who are concerned about social evaluation will conform to other males but will try to appear dominant and independent in the presence of females; alternatively, females may be more susceptible to the normative influence of males than of other females. Although the extent to which these factors would affect the results reported in this study is unclear, this possibility should be kept in mind.

It should be noted that the 16PF measure of self-sufficiency was related positively to academic performance among males but not among females (Table 1). This finding could indicate that males who perform well are concerned with their social acceptance and therefore attempt to present themselves on questionnaires in a manner that is socially appropriate for members of their sex (that is, as independent and dominant); this concern may be manifested in exactly the opposite behavior in actual social situations. This interpretation, if correct, could explain the apparent contradiction between relationships of performance to questionnaire measures of social independence (Weigand, 1953; Merrill & Murphy, 1959) and its relationships to the behavioral index used in this research.

2. Preference for Individual vs. Group Goals in a Decision-Making Task

Despite the substantial attention given to motivational correlates of academic performance during earlier phases of this research, the effect of social motivation upon academic achievement has remained unclear. It has been assumed that a social orientation is detrimental to the pursuit of academic goals, at least among males. This presupposes an incompatibility between socially directed behavior and academic goal attainment. However, the willingness to cooperate with other persons in achievement-related activity may often lead to more effective goal seeking if manifested in academic areas (e.g., through participation in informal group discussions, giving and receiving assistance in problem solving, etc.), it may increase academic effectiveness.

To consider this issue, a situation was constructed in which subjects were faced with a decision either to seek goals independently or to seek them in cooperation with other persons. The tendency to respond cooperatively in this situation was analyzed as a function of academic aptitude and performance. These analyses were expected to provide information on the facilitative or detrimental effects of socially oriented behavioral tendencies, manifested in achievement situations, upon academic effectiveness.

Representatives of four combinations of aptitude (college entrance examination score) and performance (grade point average) were divided into two-person groups and asked to participate in a decision-making task. They were told that prizes would be given both for individual performance and for team performance. The task was similar to that described by Deutsch (1962). That is, the subject was given two choices (X_1 and X_2) and was told that his partner would also have two choices (Y_1 and Y_2). The outcome in terms of the number of points received was ostensibly determined by the conjunction of the two players' choices. As an example, consider the following matrix:

$$\begin{array}{cccc} & & \underline{\text{Player } Y} & \\ & & Y_1 & Y_2 \\ \underline{\text{Player } X} & X_2 & 7,7 & 2,8 \\ & X_1 & 8,2 & 3,5 \end{array}$$

For each combination of choices the first number indicates the outcome for X and the second number the outcome for Y. For instance, if X_2 and Y_2 were selected, X would receive 2 points and Y would receive 8 points; the number of points that players would receive as a team is the sum of these, or 10 points.

Eight different matrices similar to the one above were constructed and presented to subjects sequentially. Subjects were told that both the total number of points each player had won as an individual and the total number of points each team had won would be determined after the experiment, and that monetary rewards would be given both to persons who had accumulated the most points as individual players and to groups who had accumulated the most points as a team. The possible outcomes of various combinations of responses were made known to each subject; however, participants were given no knowledge of their partner's choices while playing the game.

Several factors may affect decisions in situations such as the one described: one's expectancy for what his partner will do, the effect of one's choice upon both his own and his partner's outcomes, the relative value attached to team and individual goals, etc.. The dynamics underlying decision-making processes in these situations are complex and have been studied extensively by Deutsch and his colleagues (cf. Deutsch, 1962). The relative contribution of these factors can be manipulated fairly successfully by varying the relative magnitude of outcomes in the decision matrix. In the present study, a set of matrices was constructed that would allow inferences to be made concerning each subject's relative preference for seeking individual goals (based upon the number of points he accumulated as an individual player) and team goals (based upon the combined number of points accumulated by himself and his partner). For example, in the matrix presented above, the selection of X_2 would be assumed to indicate a team orientation, while the selection of X_1 would be assumed to indicate a decision to seek individual goals.

A preference for individual rather than team goals may have several determinants. For example, it may indicate a desire to receive recognition as an individual rather than as a member of a winning group; or, it could be one manifestation of a general tendency to be socially aloof and autonomous. Alternatively, a high team orientation could indicate a desire to please or ingratiate one's partner. More simply, it may indicate that the subject has been reinforced more frequently in the past for cooperative activity than for independent activity. Regardless of these factors, the relationship between academic performance and the tendency to seek goals cooperatively rather than individually was expected to have implications for the effect of socially-directed behavior upon academic effectiveness. For example, if academic achievement is facilitated by a general tendency to persevere in achievement-related activity independently of other persons, a negative relationship between academic performance and the frequency of team-oriented responses would be expected. On the other hand, if a general tendency to cooperate with other persons in achievement-related activity increases academic effectiveness, the relationship between team orientation and academic performance may be positive.

Method

Participants in the study were the same subjects used in the first study reported in this chapter. (p. 170); that is, 16 males and 16 females at each of four combinations of aptitude and performance participated.

Construction of Matrices

Two criteria were used in preparing decision-making matrices. First, the subject's choice should unequivocally reflect a decision to pursue either a team goal or an individual goal; to meet this criterion, any alternative that maximized the number of points that the group would receive minimized the number of points the subject would receive as an individual player, and vice versa. Second, the subject's decision should depend minimally upon the response he expects his partner to make. This was done either by making the partner's choice clear, or by insuring that a subject's choice could be interpreted similarly regardless of the partner's choice. The eight matrices selected, in the order of their presentation to the subjects, are shown in Table 48. (In each case, assume that the subject is Player X.)

The effect of the subject's choice upon team outcomes relative to the effect of his choice upon individual outcomes varied over matrices. To indicate the extent of this variation, the effect of the subject's choice upon the number of points he received as an individual player (I) was determined by subtracting the number of points he would receive by making one selection from the number he would receive by making the other choice. The choice that player Y would be expected to make in responding to Matrices 2 and 4 were clear; for these, the number of points X would receive given this choice (Y_1) was used in the calculations. For the other matrices, in which Y might be expected to make either response, the mean number of points X would receive as an individual player was averaged over Y's alternatives. The effect of the subject's choice upon team outcomes (T) was determined similarly. The relative effect of the subject's choice on team outcomes relative to individual outcomes (D_{TI}) was then calculated for each matrix by subtracting I from T. Values of I, T and D_{TI} for each matrix are shown in Table 48.

Administration Procedure

Four or five pairs of subjects were administered the task simultaneously. In each case, partners were of the same sex. In four instances in which a subject did not show up for the experiment at the scheduled time, the "odd" subject was informed that a person had been left over during a previous session and was told to assume that this person was his partner.

Partners were placed beside one another at long tables, far enough apart so that they could not see each other's work. They were given booklets containing one sample matrix and the eight test matrices described above. One member of each team was designated Player A and the other Player B. Subjects were led to believe that the matrices they were presented indicated both their own and their partner's outcomes. In fact, the forms distributed to all subjects were identical except for the sample matrix and their designation as either Player A or Player B. (In Table 1, Player X was always the subject, regardless of whether he was formally assigned to be A or B.)

Table 48

Summary of Matrices Presented to Subjects and the Effect of Choices on Outcomes

Matrix	Subject's Choice	Partner's Choices Y_1	Y_2	Average Effect of Choice on team outcome (T)	on individual outcome (I)	D_{T}
1.	X_2	7,7	2,8	3	1	2
	X_1	8,2	3,5			
2.	X_2	5,4	4,2	2*	3*	-1
	X_1	2,9	5,3			
3.	X_2	5,5	6,6	1	1.5	-.5
	X_1	6,3	8,3			
4.	X_2	5,5	6,4	2*	2*	0
	X_1	3,9	4,8			
5.	X_2	5,5	0,7	4	1.5	2.5
	X_1	7,0	1,1			
6.	X_2	7,4	5,3	2	1	1
	X_1	6,6	4,7			
7.	X_2	9,2	7,3	4	1	3
	X_1	8,8	6,7			
8.	X_2	4,0	5,1	7	1	6
	X_1	4,9	3,8			

* Calculation based upon assumption that the partner would select Y_1

To explain the task, subjects designated as Player A were presented the sample matrix below:

Player B

$$\begin{array}{lccc} & & B_1 & B_2 \\ \textbf{Player A} & A_2 & 5,6 & 3,6 \\ & A_1 & 5,3 & 4,3 \end{array}$$

Subjects designated as B were presented a similar matrix, rearranged so that B's outcomes were listed first. All subjects were read the following instructions:

> We are interested in determining how persons behave when their behavior affects not only their own goals but the goals attained by others. I am going to ask you to play a game with the person next to you. One player, labeled A, will be able to choose either A_1 or A_2; the second player, B, will have to choose between alternatives marked B_1 and B_2. On any given trial, each player will be awarded a certain number of points. The number of points he wins will depend not only upon his own choice but also on the choice of his partner.

Subjects were then referred to the sample matrix on the first page of their booklet and the outcomes of each combination of choices were explained. The instructions then continued:

> On the form I have passed out there are 8 tables similar to this one. Below each table, the possible combinations of choices and outcomes are written down. Both you and your partner will have 3 trials in each game. At no time, however, will you know how your partner has moved before making your own decision. In planning your move, you will therefore have to guess how he is likely to respond. The number of points each player wins will be determined after the game by comparing the choices each player has made on corresponding trials.

To provide an incentive to perform well on the task, and also to make clear to subjects that they could work either for individual goals or for team goals, the following additional instructions were read:

> Each player will receive a score based on the total number of points he has accumulated. On the other hand, each team will also receive a score based upon the total number of points both partners together have accumulated. To make the game interesting, we will award a prize of $2.50 to each of the ten individuals in the entire experiment who accumulate the greatest number of points for themselves, and a prize of $2.50 to each player of the five teams who have accumulated the greatest number of points as a team. There are 128 persons competing on 64 teams; your chance of winning either a team prize or an individual prize is therefore about one out of six.

Each subject was asked to make 3 responses to each matrix. For each subject, the number of team-oriented responses, or the number of responses that would maximize the total number of points awarded to the subject and his partner, was determined for each matrix and was analyzed as a function of aptitude, performance and sex.

Results

Four subjects who were selected for the study were unable to participate; three more subjects did not understand the instructions and recorded their answers incorrectly. To obtain proportional cell frequencies necessary for analyses of variance, seven more subjects were eliminated at random from various cells. The final sample consisted of 15 subjects of high ability and 13 subjects of low ability at each combination of sex and performance.

Some indication of the effectiveness of the experimental procedure in producing team-oriented and individual-oriented behavior could be obtained by comparing the frequency of team-oriented responses to a particular matrix with the magnitude of the effect of these responses on team outcomes. If subjects understood the experimental task and the consequences of their choices, they should generally make more team-oriented responses when the magnitude of team outcomes was relatively more affected by their choices. This appeared to be the case. The correlation between the mean number of team-oriented responses to each matrix and D_{T1} was .77 ($n=8$, $p<.025$). The correlation calculated for each subject and then averaged over subjects was lower ($M=.21$, $n=112$), but also was in the direction expected.

Table 49 shows the mean number of team-oriented responses for each matrix as a function of sex, aptitude (Apt) and performance (Per). For clarity, matrices are arranged in the order of the effect which a subject's choices would have upon team outcomes relative to individual outcomes (D_{T1}). An analysis of variance summary for these data is presented in Table 50. Main effects of Per and matrix (Mat) and the triple interaction of sex, Per and Mat were significant.

To explore the contingencies involved in the significant sex x Per x Mat interaction, supplementary analyses were performed on (a) the four matrices for which D_{T1} was lowest (matrices 2, 3, 4 and 6) and (b) the four matrices for which D_{T1} was greatest (matrices 1, 5, 7 and 8). Analyses of variance for these data are shown in Table 50. The mean number of team-oriented responses at each combination of sex, Apt and Per, collapsed across matrices, is shown in Table 51.

In responding to matrices in which D_{T1} was low, high performers were significantly more team-oriented ($M=1.89$) than low performers ($M=1.60$); this relationship appeared equally strong at both levels of Apt.

Table 49

Mean Number of Team-Oriented Choices as a Function of Aptitude (Apt), Performance (Per), Sex and Type of Matrix (Mat)

(Matrices are listed in the order of their increasing effect of choice on team outcomes.)

	Number of Matrix (Mat)								
	2	3	4	6	1	5	7	8	M
D_{TI}	-1	-.5	0	1	2	2.5	3	6	
Low Apt, low Per									
Males (n=13)	1.46	1.53	1.00	1.54	1.77	2.15	2.23	2.07	1.72
Females (n=13)	1.46	1.77	1.77	2.00	1.38	2.08	1.62	2.31	1.80
M	1.46	1.65	1.38	1.77	1.58	2.16	1.92	2.19	1.76
High Apt, low Per									
Males (n=15)	1.33	1.67	1.13	1.80	1.40	2.00	1.67	1.60	1.58
Females (n=15)	1.60	1.93	1.60	1.93	1.60	2.00	2.13	2.13	1.86
M	1.47	1.80	1.37	1.87	1.50	2.00	1.90	1.87	1.72
Low Apt, high Per									
Males (n=13)	1.85	1.85	1.54	1.61	1.69	1.54	1.69	1.69	1.68
Females (n=13)	1.77	1.85	1.69	2.08	1.92	2.08	2.23	2.15	1.97
M	1.81	1.85	1.62	1.81	1.81	1.81	1.96	1.92	1.83
High Apt, high Per									
Males (n=15)	1.73	2.00	1.87	2.20	2.00	2.00	2.27	2.33	2.05
Females (n=15)	1.80	2.20	1.80	2.27	2.40	2.27	2.60	2.40	2.22
M	1.77	2.10	1.83	1.77	2.20	2.13	2.43	2.37	2.13

Table 50

Analysis of Variance Summaries for Data in Tables 2 and 4

	All Matrices (Table 2)			Matrices 2,3,4,6 (Table 4a)			Matrices 1,5,7,8 (Table 4b)		
Source	df	MS	F	df	MS	F	df	MS	F
Sex	1	9.65	3.44	1	4.93	3.14	1	4.72	2.66
Aptitude (Apt)	1	3.99	1.42	1	1.91	1.22	1	2.08	1.17
Performance (Per)	1	14.25	5.07*	1	9.43	6.02*	1	5.14	2.90
Sex x Apt	1	.12	.04	1	.16	.10	1	.79	..44
Sex x Per	1	.05	.02	1	1.39	.89	1	2.28	1.29
Apt x Per	1	6.63	2.36	1	.60	.38	1	8.23	4.64*
Sex x Apt x Per	1	1.57	.56	1	.00	.00	1	3.28	1.85
Error (b)	104	2.81		104	1.57		104	1.77	
Matrices (Mat)	7	4.49	10.08*	3	3.75	8.18*	3	2.28	5.68*
Mat x Sex	7	.22	.51	3	.34	.73	3	.19	.48
Mat x Apt	7	.22	.50	3	.37	.81	3	.14	.35
Mat x Per	7	.75	1.69	3	.10	.21	3	1.55	3.85*
Mat x Sex x Apt	7	.58	1.30	3	.54	1.17	3	.54	1.34
Mat x Sex x Per	7	.93	2.10*	3	.40	.86	3	.58	1.43
Mat x Apt x Per	7	.45	1.00	3	.16	.34	3	.16	.40
Mat x Sex x Apt x Per	7	.39	.89	3	.03	.07	3	.32	.79
Error (w)	728	.445		312	.458		312	.402	

* $p < .05$
** $p < .01$

Table 51

Mean Number of Team Oriented Responses on (a) Matrices low in D_{TI} and (b) Matrices High in D_{TI} as a Function of Apt, Per and Sex

	Males			Females		
	low Per	high Per	M	low Per	high Per	M
a. Matricew low in D_{TI}						
high Apt	1.48	1.95	1.72	1.77	2.02	1.89
low Apt	1.38	1.71	1.55	1.75	1.84	1.80
M	1.44	1.84	1.64	1.76	1.94	1.85
b. Matrices high in D_{TI}						
high Apt	1.67	2.15	1.91	1.97	2.42	2.19
low Apt	2.06	1.65	1.86	1.84	2.10	1.97
M	1.85	1.92	1.88	1.91	2.27	2.09

Analyses involving matrices for which D_{T1} was high yielded a significant main effect of Mat and two significant interactions: Mat x Per and Apt x Per. The interaction of Apt and Per indicated that a positive relationship between Per and the number of team-oriented choices occurred only among students of high aptitude ($F=7.38$, $p<.01$); among low-Apt subjects, the relationship was nonsignificantly negative ($F=1.26$, n.s.). High-Apt, high-Per subjects were more team-oriented than low-Apt, high-Per subjects ($F=5.25$, $p<.05$), high-Apt, low-Per subjects ($F=7.38$, $p<.01$) and low-Apt, low-Per subjects ($F=3.46$, $p<.10$), and differed from subjects in the latter three cells combined ($F=8.15$, $p<.01$).

The significant interaction of Mat and Per appears attributable to the fact that Per was related positively to the number of team-oriented responses to all matrices except Matrix 5, where the relationship was nonsignificantly negative. This matrix, it may be noted, is similar to the well-known "prisoner's dilemma" in which, if both players try to maximize personal gain, they decrease both individual and group payoffs. This matrix may introduce additional factors into the decision making that distinguish it from the others used.

It was speculated that the relationship of Per to the frequency of team-oriented responses might differ between males and females as a result of sex differences in the relationship between academic performance and social goal attainment. This hypothesis was not convincingly supported. When the effect of choices upon team outcomes was relatively low, the frequency of team-oriented responses increased with Per at all levels of sex and Apt. When the effect of choices upon team outcomes was high, the relationship between team-oriented choices and Per was substantially positive among high-Apt subjects of both sexes; however, it was only slightly positive among low-Apt females ($F=.91$; n.s.), and was actually negative among low-Apt males ($F=2.41$; n.s.).

In interpreting the above results, it seemed important to determine the degree to which subjects at each level of Apt and Per tended to increase the frequency of team-oriented responses when the magnitude of team outcomes was more affected. The frequency of team-oriented responses was correlated with D_{T1} for each subject. The mean of these correlations at each combination of Apt, Per and sex, and an analysis of variance summary of these data, are shown in Table 52. Although no relationships reached significance, three interactions (Apt x Per, Per x sex and Apt x Per x sex) approached significance ($p<.10$). Correlations were moderately high among females at all levels of Apt and Per. Among males, however, correlations were appreciable only among low performers of low ability; these subjects differed from the residual of males at other levels of Apt and Per ($F=11.62$; $p<.001$). The mean correlation between D_{T1} and the number of team-oriented responses made by low-Apt, high-Per (overachieving) males was nonsignificantly negative.

Table 52

Mean Correlation between the Number of Team-Oriented Responses and D_{TI} as a Function of Apt, Per and Sex

	Males			Females		
	low Per	high Per	M	low Per	high Per	M
high Apt	.101	.153	.127	.247	.309	.278
low Apt	.412	-.051	.181	.206	.260	.238
M	.246	.058	.152	.228	.291	.260

F-ratios	
Sex (S)	2
Apt (A)	
Per (P)	
SxA	
SxP	3
AxP	3
SxAxP	3
MSe=	

* $p<.10$

Discussion

To summarize the major results of this study: When choices had relatively little effect upon team outcomes, the tendency to make responses that would increase the likelihood of team goal attainment was related positively to academic performance among both males and females. When decisions had a relatively great effect upon team outcomes, the tendency to make team-oriented choices related positively to performance among high-aptitude students of both sexes, but was unrelated to performance among low-aptitude students. While there was a general tendency to make team-oriented responses more frequently when choices had a greater effect upon the magnitude of team outcomes, this relationship was not strong among males who were either high in aptitude or high in performance.

The results of this study therefore call into question the general validity of the assumption that the likelihood of academic success is greater among students who are not socially motivated and who therefore are more apt to pursue academic goals without being distracted by competing social interests. While high academic performance may often require concentrated independent effort, the tendency to cooperate with others in mutual pursuit of achievement goals may generalize to the academic environment and may result in an increase in academic effectiveness. To this extent, social orientation may actually facilitate achievement in college.

The only qualification to the interpretation offered above concerns overachieving males. These subjects were less team oriented than low performers of low ability when the effect of their choices on team outcomes was high, and actually decreased their team orientation slightly when team outcomes were more affected. It may be speculated that overachievement among males results in part from a general desire to be recognized as an individual for success in goal-directed activity. Overachievement among females, however, would not have similar roots.

Students who perform poorly despite high ability might be expected to show little interest in being recognized for personal achievement. They nevertheless appear to prefer to seek goals independently of other persons. In this regard it should be recalled that, when an incentive to perform well on a judgmental task was provided, underachievers of both sexes conformed less to group estimates than did students at any other level of aptitude and performance (Table 47-1). This finding supports the view that underachieving students typically prefer not to rely upon others in achievement-related activity.

Other interpretations of the results of this study are plausible. In this regard, although high ability, high performing students of both sexes were relatively team oriented, a possible distinction between males and females may be worth considering. When the incentive to perform well on a judgmental task was minimized and social group attractiveness increased, high aptitude, high performing males conformed more to fictitious group norms than did males at other levels of Apt and Per ($p<.01$), but high aptitude, high performing females conformed less than did females not fitting this description ($p<.01$); see Table 47-2. Conformity under such conditions may be due primarily to concern over being accepted by other group members

(Deutsch & Gerard, 1955, Wyer, 1966). Therefore, while the team orientation of high performing males of high ability may be due in part to their concern over being liked or accepted by their partners similar behavior among high performing females of high ability may have different determinants. Females may have generally less interest in personal achievement than males. Those who perform well academically may be satisfied with the recognition they have received for individual achievement, and therefore may tend less to seek recognition in nonacademic situations.

Some of the fundamental questions concerning the motivational and behavioral correlates of academic achievement are still unanswered by the present study. For example, the behavioral characteristics of students in achievement-related activity that does not involve other persons are yet to be delineated. The validity of assumptions that underachievers have less interest in recognition for personal achievement than other persons, or that overachievers are more apt to persevere in achievement-related activity, has not been tested directly. More specific questions were also raised by this study which should be considered in further research in this area. Specifically, differences between matrices in the relative effect of choices upon team and individual goals were due primarily to differences in the effect of choices upon team outcomes. Since relationships involving performance were contingent upon the type of matrix involved, the use of matrices in which choices effect individual outcomes to a relatively greater extent than team outcomes should be considered. It may also be fruitful to explore choice behavior under conditions in which the likelihood that partners would be expected to select team-oriented choices is systematically varied. Finally, all groups used in this study were homogeneous with respect to sex; situations in which partners are of the opposite sex might produce substantially different results from those reported here.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this research was to identify nonintellective factors associated with academic achievement in college. Academic achievement was conceptualized as the degree to which academic performance (grade point average) exceeded or fell short of the level predicted from measured aptitude (college entrance examination score). Aptitude, which was assumed to reflect the level of performance a student would be expected to attain with an average amount of effort, and performance were each varied independently.

There were three phases of the research. In the first phase, personality and motivational correlates of academic aptitude and performance were investigated among students who had completed at least one year of college. These students were administered three questionnaires: the 16 Personality Factor Inventory, a modified version of the Liverant Goal Preference Inventory, and a short questionnaire dealing with general attitudes toward college and the value of education. Hypotheses were tested concerning the relative effects of desire for academic achievement and social motivation upon academic goal attainment. A supplementary investigation was made of the relationship of acknowledged manifest aggression and aggressive guilt to academic effectiveness.

During the second phase of the research, data were collected from freshman students before they entered college. These data included the Goal Preference Inventory administered during the first phase, expectancies concerning the college atmosphere, the value of college for vocational and social goal attainment, expectancies and desires concerning their academic performance, the quality of past and present relationships with parents, self evaluations and self acceptance, and test anxiety. Data were also obtained from parents of these students pertaining to their goals and expectancies for their children, their attitudes toward college and education, their evaluation and acceptance of their children, and selected child-rearing attitudes and practices. Implications of research performed during the first phase which suggested different effects of social and achievement-related interests among males and females were tested. These differences were hypothesized to result from the different social roles aspired to by representatives of each sex, and the instrumentality of academic achievement to the fulfillment of these roles. Prediction of the effects of parents' attitudes and behavior upon academic achievement were generally made within a similar framework. A second aspect of this research, however, was to investigate the possibility that factors assumed to facilitate the development of a stable frame of reference outside the college environment for evaluating one's behavior would increase academic effectiveness in college.

The third phase of the research had two parts, each of which was expected to clarify ambiguities in results obtained during earlier phases. Questionnaires were administered to students to determine the particular goals they believed were important to them and the perceived relevance of good grades and achievement-related activity to the attainment of these goals. Performance was predicted to be a function of the degree to which students believed academic achievement to be important for primary goal attainment. In addition, students' values were measured using scale items from a questionnaire developed by Scott (1965). These data were expected to define more clearly than did the Goal Preference Inventory the various components of academic achievement and social motivation. Similar information was obtained from parents of these students, and was used primarily to test hypotheses concerning the effect of disagreement between parents' and students' values, and between students' values and those predominant in the college population, upon academic effectiveness.

Also during this phase of the research, behavioral correlates of academic aptitude and performance were investigated in controlled experimental laboratory situations. In one study, conformity to group judgments was measured under two different incentive conditions. In the first condition conformity was assumed to indicate an attempt to improve performance on the judgmental task. In the second condition conformity was assumed to result from unwillingness to appear deviant from judgments of other group members, regardless of the accuracy of these judgments. In a second experiment, the tendency to seek achievement goals cooperatively rather than independently was investigated as a function of academic variables.

Rather than to summarize all of the significant results obtained in this study, it seems more appropriate to summarize only the findings that bear most directly upon the major issues considered during the various phases of the investigation and to attempt to arrive at general conclusions based upon these findings.

Relevance of Academic Achievement to Goal Attainment

Students who believed that academic achievement was a necessary condition for attaining the goal that was most important to them performed better than students who believed that achievement was not so essential. However, the belief that academic achievement will facilitate primary goal attainment is not a sufficient condition for actual achievement. Students who feel that academic success is only one of a number of ways of attaining primary goals, but is not necessary, may often be unwilling to expend the effort required to achieve academic success. The finding that performance was not related to the perceived relevance of college either for vocational goal attainment or for intellectual (vs. social) broadening is consistent with this conclusion.

High performers regardless of their sex believed social goals (personal popularity, effective family relationships, etc.) to be as important to them as did low performers. The type of goal sought is therefore not as important a predictor of academic effectiveness as is the perceived contingency between academic success and goal attainment. Other questionnaire data are worth noting in this regard. Performance was not related either to the belief that college was relevant for vocational goal attainment or to the estimated importance of college to intellectual vs. social broadening. On the other hand, the importance of attending college, assessed independently of the reason for its importance, was related positively to performance among both males and females. These data also support the view that, while students who believe college is important may perform better than those who do not, the perceived relevance of college for attaining any particular type of goal, be it intellectual, vocational or social, is not a predictor of academic achievement.

Desire for Personal Achievement

The acknowledged desire to receive good grades was generally related positively to academic performance. However, the stated desire to seek and to receive academic recognition was not substantially related to performance, at least among entering freshmen. Academic recognition as an end in itself, independent of its instrumentality in more primary goal attainment, may not be a sufficiently strong incentive to inspire achievement. On the other hand, a general striving for success in all forms of goal-directed activity may be manifested in the academic area and therefore may predict academic success; students who reported trying to do well in everything they undertake performed better than other students.

While interest in personal achievement is not a sufficient condition for success in college, it nevertheless may be a necessary one. Underachievers, before entering college, reported working for a substantially lower grade point average than they felt they were able to attain. Furthermore, underachievers conformed less than did other students to group judgments when the judgmental task was associated with achievement potential; although other interpretations of this result are possible, the finding is consistent with the view that these students have little interest in appearing competent in achievement-related activity.

Social Motivation and Socially-Oriented Behavior

Data obtained from upper classmen suggested that the desire for social goals was related negatively to academic achievement among males but was related positively to achievement among females. Specifically, underachieving male upperclassrem acknowledged a high desire to receive social recognition while underachieving female upperclassmen reported a low desire to receive recognition of this sort. Furthermore, social group dependence decreased with performance among males but was unrelated to performance among females. One reason for these sex differences appeared to lie in the fact that males often believe the pursuit of academic goals to be detrimental to effective social relationships while females do not share this belief. The correlation between the evaluation of oneself as "studious" and the acceptance of oneself in this regard was more highly positive among females than among males. Secondly, males who acknowledged a high desire to seek goals in both academic and social areas performed less well than did males who acknowledged a desire to seek goals in one area but not both; among females this tendency was not detected. Finally, when conformity to group judgments presumably stemmed from uncertainty over group acceptance, high ability, high performing males conformed more than did other male students, while high aptitude, high performing females conformed less.

Other results cast some doubt upon the general validity of these conclusions, however. The major piece of contradictory evidence was found in data pertaining to the relevance of academic achievement-related activity to primary goal attainment. Males perceived academic performance-facilitating behavior to be no less helpful in gaining popularity with friends, or in achieving a successful marriage and family life, than did females.

On the other hand, the often-stated assumption that socially-directed behavioral tendencies interfere with academic achievement was not generally supported by the research reported here. In fact, the tendency to cooperate with others in pursuit of achievement goals was related positively to performance. The finding that underachievers tended not to conform to group judgments when an incentive to make accurate estimates was provided also supports the possibility that an unwillingness to rely upon others for assistance in achievement situations is detrimental to academic goal-seeking effectiveness.

Sex Differences and Effects of Social Role

Several hypotheses made during various phases of the research were based upon the assumption that males typically aspire to a social role to which dominance, and competence in achievement-related activity, are appropriate. Females, on the other hand, were assumed to aspire to a nonachievement-oriented social role. Indications that males attached more importance than did females to vocational success, but gave less importance than females to a successful marriage and family life, supported these assumptions. A further assumption was that academic achievement would aid in the attainment of role-relevant goals for both males and females. That is, it would facilitate vocational goal attainment among males, and would increase the likelihood of a successful marriage (e.g., by attracting a desirable mate) among females. It was therefore hypothesized that performance among males but not among females would be related positively to the acknowledged desire for vocational success and personal achievement, while performance among females but not among males would increase with the acknowledged desire for social goals.

While data collected during the first phase of the study were consistent with this prediction, data collected during subsequent phases suggested that the hypothesis may be much too general. While performance was nonsignificantly positively related to the desire for academic recognition among males during Phase 1, no indication of this relationship was found during Phase 2. Phase 1 data showed that the desire to receive social recognition was low among underachieving females but was high among underachieving males; subsequent data collected failed to confirm this relationship. Furthermore, hypotheses that males but not females would perform better to the extent that they believed college to be important for attaining a well-paying job, and that females but not males would increase in performance to the extent that they believed college to be important for social broadening, were not supported. The importance attached to vocational and social goals, considered independently of the perceived contingency between achievement-related activity and the attainment of these goals, was unrelated to performance among either males or females.

Nevertheless, sex is often a contingency in the relationship of nonintellective factors to academic achievement. Furthermore, sex differences in performance appear often to be accounted for by differences in the social roles ascribed to males and females. Several fairly diverse findings were interpreted on the basis of these differences. The following three are representative:

1. Males were more academically effective if they acknowledged both a high incidence of aggressive behavior and low guilt over expression of aggression, while females were more effective if they acknowledged few aggressive acts in conjunction with high guilt. Dominance and aggressiveness characterize the male social role. Males who typically develop this role-relevant behavior may also attempt to seek other role-relevant (achievement-oriented) goals, as indicated by their high academic achievement. Among females, however, overt aggressive expression may be antagonistic to their supportive, submissive social role. Females who acknowledge low aggressive expression but high guilt may typically displace aggressive tendencies into activities that are consistent with this social role, such as competitiveness in academic goal seeking.

2. Religiousness was related positively to performance among males but not among females. The effect of religiousness may be to encourage students to adopt the predominant social role behavior expected of them by virtue of their sex; that is, it may increase the achievement orientation of males but decrease this orientation among females.

3. High aptitude, high performing males were more susceptible to peer group influence in nonachievement situations than were other students, while high aptitude, high performing females were less susceptible to this influence. Students' influencibility in experimental social situations may reflect the degree to which they generally tend to conform to social expectancies for their behavior. If this were true, male conformers would be more achievement-oriented, as their high academic performance suggests, while female conformers would be less achievement oriented, and therefore low in performance.

Background influences. There was little indication that background factors which were expected to increase the likelihood of adopting sex role-related behavior had appreciable effects upon academic performance. Both performance and aptitude were related negatively to the number of female siblings; a large number of female children, who presumably have generally nonachievement-oriented interests, may create a home environment that is less conducive to the development of intellectual skills. On the other hand, the frequency with which parents reported setting up either themselves or other children as models was not generally related to performance; moreover, the few significant relationships that occurred were not consistent with the hypothesis that the establishment of a same-sex parent or sibling as a model increases the likelihood of adopting role-relevant behavior and therefore increases performance. For example, the frequency with which the father was set up as an example to follow was related negatively to performance among high aptitude males, but was related positively to performance among high aptitude females. Relationships involving parents' attitudes toward academic achievement and the importance of education, and the quality of their relationships with their children, also were not clearly interpretable within this theoretical framework.

Personality Factors, Attitudes and Values

Several indexes of personality and attitudes were used during the course of this study. Their relationships to performance are summarized below:

Independence. High performers described themselves as more socially independent than lower performers (Table 1). However, they did not place a greater value upon independence than did other students (Table 37). Moreover, their behavior in experimental situations did not confirm the implications of the questionnaire data collected during the first phase of the study. For example, high performing males of high ability were highly conforming when they had reason to believe they would like other group members and were told that their judgments would be made public. Further more, high performers of both sexes tended to prefer to seek shared (group) goals rather than individual goals when these were in conflict.

The finding that underachievers conformed less than other students when an incentive to perform well on a judgmental task was provided could indicate that these students react negatively to opinions of others. This may be true only in situations where personal achievement is a factor; no indication of this resistance to influence occurred when the value of good performance on the task was deemphasized. There were less direct indications that some degree of negativism is typical of underachievers in areas associated with academic achievement. For example, among high aptitude males, negative relationships occurred between performance and (a) mothers' educational level, (b) the degree to which mothers acknowledged liking school when they were students, and (c) the degree to which the father was set up as an example to follow. Furthermore, the performance of high aptitude students was related negatively to the value attached by their mothers to both intellectualism and academic achievement, while the performance of students of lower ability was related positively to their mothers' values in these areas.

Aggressiveness and competitiveness. Among males, academic achievement appeared to increase with the tendency to acknowledge direct aggressive expression; among females, achievement was highest among students who acknowledge little aggressive behavior but had high guilt over expression of aggression. It was concluded that among females, academic effectiveness may result in part from displaced aggression, in the form of competitiveness in academic goal-seeking activity. Among males, a high level of direct aggressive expression may indicate a general dominance and assertiveness that is also manifested in the effective pursuit of social role-relevant goals. The findings that jealousy was related negatively to performance among males but positively to performance among females tangentially supports these conclusions.

On the other hand, it should be noted that competitiveness, if manifested in an unwillingness to cooperate with others in the pursuit of achievement goals, may be detrimental to academic effectiveness (see Chapter 5).

Intellectualism. An intrinsic interest in intellectual activity appeared to facilitate performance among students of high academic ability but not among students of low ability. These relationships were more pronounced among males than among females, who generally placed a high value upon intellectualism. Specifically, interest in coursework was related positively to performance among high aptitude students but was related negatively to performance among students of low measured ability. Furthermore, although a positive relationship between the value attached to intellectualism and performance occurred among males of normal and high aptitude, high performers of low ability attached less importance to this characteristic than did males at any other combination of aptitude and performance. On the other hand, these students attached a high value to academic achievement. It seems justifiable to conclude that students who exert the additional effort required to perform well despite deficinecies in intellectual skills do so for reasons other than intrinsic interest in the subject matter that they are studying. This subject matter may even become aversive to them.

Self acceptance and test anxiety. It was assumed that students whose self acceptance was high would have little concern over seeking social approval for their behavior and therefore would be relatively more likely to concentrate upon the pursuit of goals in nonsocial areas. The positive relationship between self acceptance and performance supports this assumption. An alternative interpretation of this finding, that students with high self acceptance are more confident of themselves in achievement situations, appears unjustified in light of the fact that test anxiety, a more direct measure of fear of failure, was unrelated to performance.

This latter finding, in conjunction with the finding that test anxiety was related negatively to aptitude, suggests that anxiety in testing situations may not be a cause of poor performance, but rather may be a result of intellectual inadequacies which underlie poor performance.

Influences of the Home Environment

Parental influences upon academic effectiveness were expected to be of two types. First, students whose parents attached a high degree of importance to a college education were expected to perform better than students whose parents did not value education. Second, parent-child relationships that were expected to allow a stable set of evaluative standards to be developed and maintained outside the college environment were predicted to facilitate academic effectiveness.

Parental attitudes and values. There was little consistent evidence that academic performance in college was affected by the emphasis placed upon academic success in the home environment. While students' performance was related positively to parents' expectancies for their performance, it was unrelated to their parents' anticipated disappointment if they were to perform poorly. While students who performed poorly felt less able to fulfill their parents' expectancies than did persons who performed well, there was little evidence that the possitility that their parents would be disappointed in their low grades inspired them to perform better. Parents' expectancies are probably not incentives for their children's academic achievement but rather are merely consequences of their children's performance in other academic situations (e.g., high school).

The hypothesis that a general academic orientation by the father would inspire high performance among male students was not supported by the data obtained in this study. Explicit indications of fathers' interest in academic achievement (e.g., the importance attached to academic achievement and intellectualism, reported liking for school when a student, and the emphasis placed upon intellectual as opposed to social broadening in college) were not related significantly to performance among either males or females. Support for the analogous hypothesis, that academic achievement-oriented mothers would encourage academic achievement among female children but not among male children, was also weak. The importance attached by mothers to academic achievement was related positively to performance among low and normal aptitude females, but was related negatively to performance among high aptitude females. Furthermore, the degree to which mothers reported liking school when they were students was related positively to performance among females but negatively to performance among males. However, mothers' educational level was not related to performance among females, nor was either the importance attached to college for both men and women or the relative emphasis placed upon intellectual and social broadening.

The quality of parent-child relationships. Substantial support was obtained for the hypothesis that a congenial home environment facilitates academic effectiveness. Performance was related positively to the degree to which students reported getting along well with their mothers and also to the degree to which they felt similar to their mothers in attitudes and beliefs. Similar variables pertaining to the father were less strongly related to performance; the quality of father-child relationships may be a less important factor in establishing and maintaining a tie to the home environment than is the quality of mother-child relationships. Both mothers' and fathers' acceptance of their child was related positively to the child's academic performance, however.

During the final phase of the study, a more refined indication of parent-child similarity in values was obtained by measuring the discrepancy between parents' and students' responses to items on specific value scales. In general, these indexes were unrelated to performance. This, in addition to the inconsistent relationships between performance and parents' estimates of their similarity to their child, suggests that the student's perceived similarity to his parent is a more important factor than is the actual similarity between student and parent.

Students whose parents disagreed in the criteria for evaluating them were assumed to have developed less firm standards for self evaluation and consequently were hypothesized to be less likely to apply themselves effectively in pursuit of academic goals. This hypothesis was supported during the second phase of the study. Self acceptance was related negatively to the absolute magnitude of the difference between parents' descriptions of their children; parental disagreement was related negatively to academic effectiveness. This latter finding was not replicated in the third phase of the study, however. Between-parent differences in general values were also unrelated to performance of the students investigated during this phase. The failure to confirm earlier findings may be attributable to differences in the samples used during these two phases of the study. Students taking part in the second phase of the research lived away from home, while those participating in the third phase of the study commuted to college.

Parental child-rearing attitudes and practices. During both the second and the third phases of the project, indexes of parental child-rearing attitudes were obtained using items selected from the Parental Attitude Research Instrument. These measures were generally unrelated to performance. Furthermore, analyses involving both students' and parents' estimates of the frequency of punishment administered by the parent, the amount of independence allowed, etc., yielded inconsistent results. It must be concluded that the degree of authoritarianism and punitiveness characterizing parental child rearing practices, at least as inferred from parents' acknowledged attitudes, has neither a facilitating nor a detrimental effect upon academic performance in college.

Concluding Remarks

Many of the results obtained in this research, as in studies reported elsewhere, are inconclusive. Despite the breadth of the investigation, several ambiguities still exist concerning the motivational correlates of academic achievement, and background factors that predict this achievement. It is clear that a single theoretical approach to this problem is premature until more refined and intensive investigations are made of the issues raised by this research.

Two methodological aspects of the research performed in this project are worth noting. The technique of manipulating academic aptitude and performance independently was of heuristic value in demonstrating that several factors often assumed to affect academic performance should more properly be considered to be correlates of academic aptitude. Consideration of the personality and motivational effects of general intellectual ability was not the primary concern of this project, and the implication of results that bear upon this issue were not thoroughly explored. Additional research in this direction is warranted.

Second, the investigation of motivational correlates of academic aptitude and performance by systematically observing behavior in controlled experimental situations appears to be an extremely fruitful procedure for clarifying several of the ambiguities raised by questionnaire research. Unfortunately, this approach was not used in the present project until late in the final phase of the investigation. Further study of factors related to academic achievement using experimental techniques may provide substantial insight into the many theoretical questions that have yet to be resolved in this complex but important area of research.

BIBLIOGRAPHY

Adorno, T.W., Frenkel-Brunswik, Else, Levinson, D.J., & Sanford, R.N. The Authoritarian Personality. New York: Harper, 1950.

Asch, S.E., Effects of group pressure upon the modification and distortion of judgments. In H. Guetzkow (Ed.), Groups, leadership and men. Pittsburgh: Carnegie Press, 1951, 177-190.

Baldwin, A.L., Kalhorn, J. & Breese, F.H. Patterns of parent behavior. Psychol. Monogr., 1945, No. 58 (Whole No. 268).

Becker, S.W., Lerner, M.J. & Carroll, J. Conformity as a function of birth order, payoff, and type of group pressure. J. abnorm. soc. Psychol., 1964, 69, 318-323.

Bennett, E.M. & Cohen, L.R. Men and women: personality patterns and contrasts. Genet. Psychol. Monogr., 1959, 59, 101-155.

Brehm, J. & Cohen, A. Re-evaluation of choice of alternatives as a function of their number and similarity. J. abnorm. soc. Psychol., 1959, 58, 373-378.

Burgess, Elva Personality factors of over-and under-achievers in engineering. J. educ. Psychol., 1956, 47, 89-99.

Cattell, R.B., Saunders, D.R. & Stice, G.P. The Sixteen Personality Factor Questionnaire. Champaign, Ill.: Institute of Personality and Ability Testing, 1957.

Cobb, H.V. Role-wishes and general wishes of children and adolescents. Child Develpm., 1954, 25, 173-183.

Crowne, D.P., Stephens, M. & Kelly, R. The validity and equivalence of tests of self-acceptance. J. Psychol., 1961, 51, 101-112.

Deutsch, M. Cooperation and trust: Some theoretical notes. In 1962 Nebraska symposium on motivation, 1962, 275-320.

Deutsch, M. & Gerard, H.B. A study of normative and informational influences upon individual judgments. J. abnorm. soc. Psychol., 1955, 51, 629-636.

Dittes, J.E. & Kelley, H.H. Effects of different conditions of acceptance upon conformity to group norms. J. abnorm. soc. Psychol., 1956, 53, 100-107.

Drews, E.M. & Teahan, J.E. Parental attitudes and academic achievement. J. clin. Psychol. 1957, 13, 328-332.

Exline, R.V. Effect of sex, norms and affiliation motivation upon accuracy of perception in interpersonal preferences. J. Pers. 1960, 28, 397-412.

Festinger, L. A theory of cognitive dissonance, Evanston Ill. Row, Peterson, 1957.

Gebhart, C. & Hoyt, D.P. Personality needs of under-and over-achieving freshmen. *J. appl. Psychol*., 1958, *42*, 125-128.

Gilmore, J.V., A new venture in the testing of motivation. *Coll. Board. Rev*., 1951, *15*, 221-226.

Harvey, O.J. & Consalvi, C. Status and conformity to pressure in informal groups. *J. abnorm. soc. Psychol*., 1960, *60*, 182-187.

Kelman, H.C. Processes of opinion change. *Publ. Op. Quart*., 1961, *25*, 757-781.

Kornich, M. (Ed.) *Underachievement*. Springfield, Ill. : Charles Thomas, 1965.

Lavin, D.E. *The prediction of academic performance*. New York: Russell Sage Foundation, 1965.

Liverant, S. The use of Rotter's social learning theory in developing a personality inventory. *Psychol. Monogr*., 1958, *72* (Whole No. 287).

McClelland, D.C., Atkinson, J.W., Clark, R.A. & Lowell, E.L. *The achievement motive*. New York: Appleton-Century-Crofts, 1953.

Merrill, R.M. & Murphy, D.T. Personality factors and academic achievement in college. *J. couns. Psychol*., 1959, *6*, 207-210.

Mitchell, J.V., Jr., Goal-setting behavior as a function of self-acceptance, over-and under-achievement, and related personality variables. *J. educ. Psychol*., 1959, *50*, 93-104.

Rosenblith, J.F. Learning by imitation in kindergarten children. *Child. Develpm*. 1959, *30*, 69-80.

Scott, W.A. *Values and organizations*. Chicago: Rand McNally, 1965

Sears, P.S. Levels of aspirations in academically successful and unsuccessful children, *J. abnorm. soc. Psychol*. 1940, *35*, 498-536.

Shaw, M. & Grubb, J. Hostility and able high school underachievers. *J. couns. Psychol*., 1958, *5*, 263-266.

Thibaut, J.W. & Kelley, H.H. *The social psychology of groups*. New York: Wiley, 1959.

Todd, F.J., Terrell, G. & Frank, C.D. Differences between normal and underachievers of superior ability. *J. appl. Psychol*., 1962, *46*, 183-190.

Weigand, G. Goal aspiration and academic success. *Personnel guid. J*., 1953, *31*, 458-461.

Weiss, P., Some aspects of feminity. Unpub. Ph.D. dissert., Univ. of Colorado, 1961.

Weitz, H.J. & Wilkinson, H. Jean The relationship between certain non-intellective factors and academic success in college. *J. counsel. Psychol*., 1957, *4*, 54-60.

Winer, B.J. Statistical principles in experimental design. New York: McGraw-Hill, 1962.

Winterbottom, M.R. The relation of childhood training in independence to achievement motivation. Univ. of Michigan, 1953. University Microfilms. Publ. No. 5113,297,302,305,313.

Worrell, L. Level of aspiration and academic success J. educ. Psychol., 1959 50, 47-54.

Wyer, R.S., Weatherley, D.A. & Terrell, G. Social role, aggression and academic achievement. J. pers. soc. Psychol., 1965, 1, 645-649,

Wyer, R.S. Effect of child-rearing attitudes and behavior on children's responses to hypothetical social situations. J. pers. soc. Psychol., 1965, 2, 480-486.

Wyer, R.S. Effects of incentive to perform well, group attraction and group acceptance on conformity in a judgmental task. J. pers. soc. Psychol., 1966, in press.

Appendix A

Modification of Liverant's Goal Preference Inventory

I LIKE..., AND I EXPECT... QUESTIONNAIRE

Name:_______________________________________**Age:**________**Sex:**____________

The purpose of this questionnaire is twofold. We wish to (1) measure how strongly you like or dislike to engage in various activities or events, and (2) to determine how likely it is that you will engage in these activities or events.

DIRECTIONS: Each item is composed of two questions, one beginning: "How strongly do I like to," and the other, "How strongly do I expect to." For example:

____How strongly do I like to

go skiing every chance I get.

____How strongly do I expect to

You are to indicate your response in the blank to the left of each question. In doing this, use the numerical scale presented on the following page. Since this scale is not represented elsewhere you should remove page 2 from the rest of the booklet so that you may keep this scale in view while filling out the questionnaire.

Note:

(1) Answer these questions from YOUR point of view.

(2) Be careful not to confuse what you like with what you feel is likely (expect) to happen. That is, in indicating how strongly you like something, do not let what you expect to happen influence your response. And, conversely, in indicating how strongly you expect something to happen, do not let what you would like to happen influence your response. In short, do not let your response to the "I like" question influence you in your response to the "I expect" question, or vice versa.

(3) Answer every question. It is not necessary to ponder over your answers.

How strongly I like an activity		How strongly I expect the activity to occur
like very much	+3	certain to occur
like quite a bit	+2	almost sure to occur
like slightly	+1	likely to occur
neither like nor dislike	0	may or may not occur
dislike slightly	-1	likely not to occur
dislike quite a bit	-2	almost sure not to occur
dislike very much	-3	certain not to occur

Examples:

-2 How strongly do I like to
+3 How strongly do I expect to   walk to class in the snow?

+3 How strongly do I like to
-1 How strongly do I expect to   be elected to Phi Beta Kappa?

+2 How strongly do I like to
+2 How strongly do I expect to   return to school spring semester?

Note:

(1) Be sure to include the appropriate sign (+ or -) in answering the questions.

(2) Remove this page so that you can refer to the scale above when answering the questions on the following pages.

(1)
_____How strongly do I like to
_____How strongly do I expect to

be awarded parts in plays, be asked to appear on radio, T.V., etc?

(2)
_____How strongly do I like to
_____How strongly do I expect

work to acquire the social graces, i.e., skills approved by members of my group?

(3)
_____How strongly do I like to
_____How strongly do I expect to

be chosen to give oral reports in the classroom?

(4)
_____How strongly do I like to
_____How strongly do I expect to

have friends be tolerant of my more "objectionable" characteristics?

(5)
_____How strongly do I like to
_____How strongly do I expect to

be recognized as an expert on the best restaurants, night clubs, etc.?

(6)
_____How strongly do I like to
_____How strongly do I expect to

take a course where the instructor teaches on a very high level?

(7)
_____How strongly do I like to
_____How strongly do I expect to

be recognized as an expert in an academic argument?

(8)
_____How strongly do I like to
_____How strongly do I expect to

go out of my way to help others?

(9)
_____How strongly do I like to
_____How strongly do I expect to

drive a high priced good looking car?

(10)
_____How strongly do I like to
_____How strongly do I expect to
be named the outstanding senior?

(11)
_____How strongly do I like to
_____How strongly do I expect to
have my friends enjoy my social accomplishments?

(12)
_____How strongly do I like to
_____How strongly do I expect to
volunteer my car to take people places even if it is out of my way?

(13)
_____How strongly do I like to
_____How strongly do I expect to
give the impression that I have important connections?

(14)
_____How strongly do I like to
_____How strongly do I expect to
be recognized as the spokesman of a group?

(15)
_____How strongly do I like to
_____How strongly do I expect to
avoid discussing a poor grade?

(16)
_____How strongly do I like to
_____How strongly do I expect to
spend time with other people even to the point of inefficient use of time?

(17)
_____How strongly do I like to
_____How strongly do I expect to
work for leadership roles?

(18)
_____How strongly do I like to
_____How strongly do I expect to
have other students ask to compare their grades with mine?

(19)
_____How strongly do I like to
_____How strongly do I expect to
study hard on weekends and holidays?

(20)
_____How strongly do I like to
_____How strongly do I expect to
have friends offer to take the blame for difficulties in order to help me?

(21)
_____How strongly do I like to
_____How strongly do I expect to
be known as the life of the party in social situations?

(22)
_____How strongly do I like to
_____How strongly do I expect to
be recognized as having an extensive and complex vocabulary?

(23)
_____How strongly do I like to
_____How strongly do I expect to
suppress activities and thoughts which I think may offend others?

(24) H
_____How strongly do I like to
_____How strongly do I expect to
have people frequently offer to do things for me?

(25)
_____How strongly do I like to
_____How strongly do I expect to
discuss and evaluate the social competence of others?

(26)
_____How strongly do I like to
_____How strongly do I expect to
be an authority on the latest slang?

(27)
_____How strongly do I like to
_____How strongly do I expect to
bring in outside material to show to instructors?

(28)
_____How strongly do I like to
_____How strongly do I expect to

avoid making myself stand out as different in social groups?

(29)
_____How strongly do I like to
_____How strongly do I expect to

get involved in campus political activities?

(30)
_____How strongly do I like to
_____How strongly do I expect to

be allowed to prepare assignments concerning a personal interest or involvement?

(31)
_____How strongly do I like to
_____How strongly do I expect to

read more on a subject than is required by the instructor?

(32)
_____How strongly do I like to
_____How strongly do I expect to

avoid expression of hostility in face-to-face situations?

(33)
_____How strongly do I like to
_____How strongly do I expect to

be seen frequently with impressive dates?

(34)
_____How strongly do I like to
_____How strongly do I expect to

discuss test items that I have missed with the instructors of the course?

(35)
_____How strongly do I like to
_____How strongly do I expect to

lend personal belongings of substantial value?

(36)
_____How strongly do I like to
_____How strongly do I expect to

have friends who offer to lend me money?

(37)
_____How strongly do I like to
_____How strongly do I expect to

be asked to social functions which have prestige value ?

(38)
_____How strongly do I like to
_____How strongly do I expect to

learn as many different dance steps as possible?

(39)
_____How strongly do I like to
_____How strongly do I expect to

receive good grades?

(40)
_____How strongly do I like to
_____How strongly do I expect to

have others compliment me on my dress and grooming?

(41)
_____How strongly do I like to
_____How strongly do I expect to

be known as an authority regarding the ranking of campus social organizations?

(42)
_____How strongly do I like to
_____How strongly do I expect to

know the academic standing of various departments and universities?

(43)
_____How strongly do I like to
_____How strongly do I expect to

have an instructor ask about related work I'm doing either in other courses or on my own?

(44)
_____How strongly do I like to
_____How strongly do I expect to

laugh frequently at others' jokes?

(45)
_____How strongly do I like to
_____How strongly do I expect to
be well dressed when on campus?

(46)
_____How strongly do I like to
_____How strongly do I expect to
sit near the front of the room?

(47)
_____How strongly do I like to
_____How strongly do I expect to
have others openly express their appreciation of myself?

(48)
_____How strongly do I like to
_____How strongly do I expect to
do things with the gang just because I like them?

(49)
_____How strongly do I like to
_____How strongly do I expect to
have others ask me about my dates?

(50)
_____How strongly do I like to
_____How strongly do I expect to
accept a date for prestige-little personal interest?

(51)
_____How strongly do I like to
_____How strongly do I expect to
be accepted into honorary academic societies?

(52)
_____How strongly do I like to
_____How strongly do I expect to
have friends listen sympathetically to my problems?

(53)
_____How strongly do I like to
_____How strongly do I expect to
be a leader in my group?

(54)
_____How strongly do I like to

discuss my test results personally with an instructor?

_____How strongly do I expect to

(55)
_____How strongly do I like to

start conversations about academic subjects outside of class?

_____How strongly do I expect to

(56)
_____How strongly do I like to

change my opinions and behaviors to conform with those of friends?

_____How strongly do I expect to

(57)
_____How strongly do I like to

be known as a student leader on campus?

_____How strongly do I expect to

(58)
_____How strongly do I like to

be praised by the instructor for my ability in class?

_____How strongly do I expect to

(59)
_____How strongly do I like to

avoid turning down a proposed social invitation?

_____How strongly do I expect to

(60)
_____How strongly do I like to

have friends who help me get dates that I would enjoy?

_____How strongly do I expect to

ANSWER SHEET

Name ______________________________________ Sex ____________________

Scale

How strongly I like an activity		How strongly I expect the activity to occur
like very much	7	certain to occur
like quite a bit	6	almost sure to occur
like slightly	5	likely to occur
neither like nor dislike	4	may or may not occur
dislike slightly	3	likely not to occur
dislike quite a bit	2	almost sure not to occur
dislike very much	1	certain not to occur

1.	like	expect		like	expect		like	expect		like	expect
1.	___	_____	16.	___	_____	31.	___	_____	46.	___	_____
2.	___	_____	17.	___	_____	32.	___	_____	47.	___	_____
3.	___	_____	18.	___	_____	33.	___	_____	48.	___	_____
4.	___	_____	19.	___	_____	34.	___	_____	49.	___	_____
5.	___	_____	20.	___	_____	35.	___	_____	50.	___	_____
6.	___	_____	21.	___	_____	36.	___	_____	51.	___	_____
7.	___	_____	22.	___	_____	37.	___	_____	52.	___	_____
8.	___	_____	23.	___	_____	38.	___	_____	53.	___	_____
9.	___	_____	24.	___	_____	39.	___	_____	54.	___	_____
10.	___	_____	25.	___	_____	40.	___	_____	55.	___	_____
11.	___	_____	26.	___	_____	41.	___	_____	56.	___	_____
12.	___	_____	27.	___	_____	42.	___	_____	57.	___	_____
13.	___	_____	28.	___	_____	43.	___	_____	58.	___	_____
14.	___	_____	29.	___	_____	44.	___	_____	59.	___	_____
15.	___	_____	30.	___	_____	45.	___	_____	60.	___	_____

Appendix B

General Information Questionnaire -- Phase I

COLLEGE OF ARTS AND SCIENCES

NAME____________________

AGE____________________

SEX____________________

MAJOR____________________

MARITAL STATUS____________________

A QUESTIONNAIRE

1. In general, how interesting to you is the material you study for your coursework? (check one)

____The most interesting part of college life.

____Definitely as interesting as any other part of college life.

____Reasonably interesting, but less so than some other current activities.

____Only slightly interesting.

2. Have you ever had an interesting final exam?

____Often

____Occasionally

____Rarely

____Never

3. Do you ever get into discussions with your professors out of class?

____Often

____Occasionally

____Rarely

____Never

4. What do you consider the most favorable traits of those whom you like and respect?

____

5. How many dates do you usually have in a month?____________________

6. How many different girls (or boys) did you date more than once during last semester?

____

7. How certain are you in your choice of a profession or occupation(e.g., lawyer, housewife, journalist, teacher, etc.) which you intend to pursue? (Circle the appropriate letter.)

A	B	C	D
quite uncertain	More uncertain than certain	More certain than uncertain	Quite certain

8. How important is doing well in your present course work to attaining your intended vocational goal? (Circle the appropriate letter.) If you circled A in question No. 7 and feel that you cannot answer this question, place an X here:________________________

A	B	C	D
Quite unimportant	Rather unimportant	Fairly important	Quite important

9. How much do you think your present course of study will contribute toward your future success in life? (Circle the appropriate letter.)

A	B	C	D
A great deal	A fair amount	A little	Very little

10. How much do you think your present course of study will contribute toward your future happiness in life? (Circle the appropriate letter.)

A	B	C	D
A great deal	A fair amount	A little	Very little

11. In your particular case, do you feel that you were adequately prepared for the "freshman" courses you were advised to take as the result of your performance on the College Placement Tests? Answer this question by writing in the blank to the left of each of the following five categories of preparedness the names of your first semester courses which fit that category.

______________________________More than adequately prepared, to the point of being bored.

______________________________Somewhat more than adequately prepared.

______________________________Adequately prepared.

______________________________Somewhat unprepared.

______________________________Quite unprepared, to the point of being lost.

For each of the questions appearing below, indicate an upper limit and a lower limit G.P.A. (grade point average). Choose these G.P.A. limits in accordance with the following definitions of upper and lower limits:

Upper limit: The highest value you would expect; a value above this limit would be considered a stroke of good fortune.

Lower limit: The lowest value you would expect or consider acceptable.

Write your answers to two decimal places, e.g., 1.79, 3.34, 2.10, 4.00, etc.. Read all five questions before answering any of them.

12. Upper limit______What cumulative G.P.A. are you actually working toward?

Lower limit______

13. Upper limit______What cumulative G.P.A. do you personally feel you should be working toward? Your answer here should differ from your answer to question 12 only if you wish that you were studying more, or less, than you actually are.

Lower limit______

14. Upper limit______What cumulative G.P.A. do you think you could get with an all-out effort on your part?

Lower limit______

15. Upper limit______What cumulative G.P.A. do your parents expect you to get?

Lower limit______

16. Upper limit______What cumulative G.P.A. would you like to have assuming that anything is possible?

Lower limit______

17. ________________What is your present cumulative G.P.A.?

Appendix C

Subscales of the MHS Used in Study of Relationship Between Aggression and Academic Achievement

In deriving four subscales of the Siegel Manifest Hostility Scale seven judges were used, all Ph.D.'s with considerable clinical experience. The following instructions were given to each judge.

"The attached sheet contains items of the Manifest Hostility Scale (MHS), developed by Saul Siegel. It is composed of MMPI items selected by clinicians as reflecting manifest hostility. As you can see from the items, they are not homogeneous in terms of the directness with which they relate to manifest hostility. I would like your help in indentifying the following four categories of items among those in the MHS.

1. Please place a number 1 before those statements which refer primarily to acts of aggression or hostility.
2. Please place a number 2 before those statements which refer primarily to subjective feelings of hostility.
3. Please place a number 3 before those statements which refer primarily to attitudes or values which reflect an absence of guilt about hostility.
4. Place a number 4 before those statements which primarily involve the projection of hostility.

Treat these categories as mutually exclusive, i.e., place each item into only one category."

To be included in a given category an item must have placed in that category by at least 5 of the 7 judges.

The resulting subscales were as follows:

(1) Acts of Aggression: Items 4,5,7,10,12,14,19,22,23,26,32,37,42,46.

(2) Subjective Feelings of Aggression: Items 8,11,16,21,25,27,28,30,31,34,50.

(3) Absence of Guilt about Hostility: Items 2,6,13,17.

(4) Projection of Hostility:* Items 1,15,20,24,29,33,35,36,38,39,40,43.

Note: The direction of scoring each item is obvious from a reading of the item.

The Kuder Richardson reliabilities of the four subscales when scored for 436 male and female college students were as follows:

Scale 1, $r_{tt} = .484$

Scale 2, $r_{tt} = .435$

Scale 3, $r_{tt} = .544$

Scale 4, $r_{tt} = .131$

* The very low reliability of Scale 4 caused it to be dropped from consideration in the study.

Name ______________________________

MHS INVENTORY

INSTRUCTIONS:

Read each of the statements below and decide whether it is true as applied to you or false as applied to you.

If a statement is TRUE or MOSTLY TRUE, as applied to you, put a line through the letter T to the left of the statement. If a statement is FALSE or NOT USUALLY TRUE, as applied to you, put a line through letter F. (e.g., like this: ~~T~~ F)

Remember to give your own opinion of yourself. Do not leave any blank spaces if you can possibly avoid it. Please try to make some answer to every statement.

T F 1. I have often found people jealous of my good ideas, just because they had not thought of them first.

T F 2. I don't blame any one for trying to grab everything he can get in this world.

T F 3. It is safer to trust nobody.

T F 4. I am often inclined to go out of my way to win a point with someone who has opposed me.

T F 5. I have very few quarrels with members of my family.

T F 6. I think nearly anyone would tell a lie to keep out of trouble.

T F 7. I am easily downed in an argument.

T F 8. I am not easily angered.

T F 9. When someone does me wrong I feel I should pay him back if I can, just for the principle of the thing.

T F 10. I have at times stood in the way of people who were trying to do something, not because it amounted to much, but because of the principle of the thing.

T F 11. Some of my family have habits that bother and annoy me very much.

T F 12. I have at times had to be rough with people who were rude or annoying.

T F 13. It is all right to get around the law if you don't actually break it.

T F 14. I like to poke fun at people.

T F 15. Someone has it in for me.

T F 16. I easily become impatient with people.

T F 17. I do not blame a person for taking advantage of someone who lays himself open to it.

T F 18. Most people are honest chiefly through fear of being caught.

T F 19. I sometimes tease animals.

T F 20. I have frequently worked under people who seem to have things arranged so that they get credit for good work but are able to pass off mistakes onto those under them.

T F 21. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.

T F 22. I like to play practical jokes on others.

T F 23. I am often so annoyed when someone tries to get ahead of me in a line of people that I speak to him about it.

T F 24. I know who is responsible for most of my troubles.

T F 25. At times I have a strong urge to do something harmful or shocking.

T F 26. In school I was sometimes sent to the principal for cutting up.

T F 27. I am often sorry because I am so cross and grouchy.

T F 28. I often feel irritable.

T F 29. I am sure I get a raw deal from life.

T F 30. At times I feel like smashing things.

T F 31. I get angry sometimes.

T F 32. In school my marks in deportment were quite regularly bad.

T F 33. I think most people would lie to get ahead.

T F 34. Sometimes I feel as if I must injure either myself or someone else.

T F 35. If people had not had it in for me I would have been much more successful.

T F 36. I believe I am being followed.

T F 37. I never have "temper tantrums".

T F 38. I believe I am being plotted against.

T F 39. Someone has been trying to rob me.

T F 40. I have no enemies who really wish to harm me.

T F 41. I do not try to cover up my poor opinion or pity of a person so that he won't know how I feel.

T F 42. I am often said to be hotheaded.

T F 43. I commonly wonder what hidden reason another person may have for doing something nice for me.

T F 44. I get mad easily and then get over it soon.

T F 45. At times I feel like picking a fist fight with someone.

T F 46. Sometimes I enjoy hurting persons I love.

T F 47. I can easily make other people afraid of me, and sometimes do for the fun of it.

T F 48. Horses that don't pull should be beaten or kicked.

T F 49. Most people make friends because friends are likely to be useful to them.

T F 50. There are certain people I dislike so much that I am inwardly pleased that they are catching it for something they have done.

Appendix D

General Questionnaire Administered to Students -- Phase II

Name_______________________________

PERSONAL DATA SHEET

Answer these questions by checking the response that is closest to the way that you feel.

1. Do you expect work in college to be easy or hard ?
_____quite a bit harder than high school
_____somewhat harder than high school
_____about the same as high school
_____somewhat easier than high school

2. What do you expect your grades to be in college?
_____quite a bit higher than in high school
_____somewhat higher than in high school
_____about the same as in high school
_____somewhat lower than in high school
_____quite a bit lower than in high school

3. Are you attending college to broaden yourself intellectually, or socially, or both?
_____solely to broaden myself intellectually
_____primarily to broaden myself intellectually, but somewhat to broaden myself socially
_____to broaden myself both intellectually and socially to an equal degree
_____primarily to broaden myself socially, but somewhat to broaden myself intellectually
_____solely to broaden myself socially

4. What do you feel is the value of a college education?
_____solely to obtain a well-paying job upon graduation
_____primarily to obtain a well-paying job upon graduation
_____slightly to obtain a well-paying job upon graduation
_____not at all to obtain a well-paying job upon graduation

5. What are the main factors in attaining good grades?
_____almost completely intelligence
_____primarily intelligence, but somewhat effort
_____intelligence and effort to an equal degree
_____somewhat intelligence, but primarily effort
_____almost completely effort

6. How challenging do you expect college work to be?
_____highly challenging
_____somewhat challenging
_____not very challenging
_____not at all challenging

7. What do you expect the atmosphere at C.U. to be like?
_____highly academic
_____primarily academic but somewhat social
_____both academic and social to an equal degree
_____primarily social, but somewhat academic
_____highly social

8. How similar do you expect that the goals and values of the students at C.U. will be to yours?
_____goals and values almost identical to mine
_____goals and values very similar to mine
_____goals and values fairly similar to mine
_____goals and values generally dissimilar to mine
_____goals and values completely opposite to mine

9. How religious do you expect most of the students at C.U. to be?
_____highly religious
_____somewhat religious
_____not very religious
_____not at all religious

10. Relative to high school teachers, how stimulating do you expect the instructors at C.U. to be?
_____very much more stimulating than high school
_____somewhat more stimulating than high school
_____about the same as those in high school
_____somewhat less stimulating than in high school

11. Compared to high school, how stimulating do you expect the course work to be?
_____very much more stimulating
_____somewhat more stimulating
_____about the same
_____somewhat less stimulating
_____very much less stimulating

12. How much time do you expect to devote to studying in college?
_____almost all my time
_____about 75% of my time
_____about 50% of my time
_____about 25% of my time
_____very little of my time

13. How important is going to college to you?
_____extremely important to me
_____very important to me
_____somewhat important to me
_____not very important to me
_____not at all important to me

14. How important is your going to college to your parents?
_____extremely important to my parents
_____very important to my parents
_____somewhat important to my parents
_____not very important to my parents
_____not at all important to my parents

15. To what extent are you going to college to please your parents?
_____almost completely to please my parents
_____mostly to please my parents, but somewhat because I want to go
_____both to please my parents and because I want to go
_____somewhat to please my parents, but mostly because I want to go
_____almost completely because I want to go

16. How many campus activities do you expect to be active in?
_____a large number
_____a few
_____only 1 or 2
_____none at all

17. How often do you expect to date while at the University?
_____very frequently
_____fairly frequently
_____only occasionally
_____very infrequently

18. Is your father living? _____yes _____no
If not, how old were you when he died?_____

19. Is your mother living? _____yes _____no
If not, how old were you when she died?_____

20. At the present time, how well do you feel that you get along with your parents?

a. with your mother?
_____extremely well
_____very well
_____fairly well
_____not very well
_____not at all

b. with your father?
_____extremely well
_____very well
_____fairly well
_____not very well
_____not at all

21. In general, how fair was the punishment you received from your parents?

a. from your mother
_____always fair
_____usually fair
_____not very fair
_____usually unfair

b. from your father?
_____always fair
_____usually fair
_____not very fair
_____usually unfair

22. When you were punished by your parents, what was the predominant form of punishment?

a. from your mother

_____severe physical
_____physical
_____verbal
_____denial of pleasures

b. from your father

_____severe physical
_____physical
_____verbal
_____denial of pleasures

23. In general, how strict do you feel your parents were with you?

a. your mother

_____too strict
_____very strict
_____somewhat strict
_____not very strict
_____not strict enough

b. your father

_____too strict
_____very strict
_____somewhat strict
_____not very strict
_____not strict enough

24. In general, how frequently were you punished by your parents?

a. by your mother

_____very frequently
_____somewhat frequently
_____not very frequently
_____almost never

b. by your father

_____very frequently
_____somewhat frequently
_____not very frequently
_____almost never

25. How much independence were you allowed before 12 years of age?

a. by your mother

_____very much
_____quite a bit
_____some
_____very little

b. by your father

_____very much
_____quite a bit
_____some
_____very little

26. How much independence were you allowed between 13 and 17 years of age?

a. by your mother

_____very much
_____quite a bit
_____some
_____very little

b. by your father

_____very much
_____quite a bit
_____some
_____very little

27. In general, how similar do you consider yourself to your parents (in opinions, beliefs, etc.)?

a. to your mother

_____extremely similar
_____quite similar
_____somewhat similar
_____not very similar
_____not at all similar

b. to your father

_____extremely similar
_____quite similar
_____somewhat similar
_____not very similar
_____not at all similar

28. Which parent do you feel most similar to?

_____mother
_____father
_____both equally
_____similar to neither

29. To which parent did you feel closest when growing up?
_____mother
_____father
_____both equally
_____close to neither

30. Who has the most influence over your behavior?
_____my mother very much more than my father
_____my mother somewhat more than my father
_____my mother and my father to an equal extent
_____my father somewhat more than my mother
_____my father very much more than my mother
_____neither my mother nor my father to any extent

31. In general, how strongly do you resent taking orders from others?
_____resent extremely
_____resent very much
_____resent somewhat
_____resent slightly
_____do not resent at all

32. How strongly do you resent having to take courses which you believe are unessential to your goals?
_____resent extremely
_____resent very much
_____resent somewhat
_____resent slightly
_____resent not at all

33. At present, what do you expect to major in here at the University?
____

How certain are you that this will remain your choice?
_____very certain
_____fairly certain
_____not very certain
_____very uncertain

34. At the present time, what are your plans upon graduation from college?
____
____

How similar are these plans to the work of your parents?

a. mother	b. father
_____very similar	_____very similar
_____fairly similar	_____fairly similar
_____not very similar	_____not very similar
_____very dissimilar	_____very dissimilar

34. cont.

How similar are your plans to the goals or ideals that your parents hold for you?

a. mother

_____very similar
_____fairly similar
_____not very similar
_____very dissimilar

b. father

_____very similar
_____fairly similar
_____not very similar
_____very dissimilar

Appendix E

Test Anxiety Questionnaire

and

Questionnaire on Expected Grades in College

PART I

QUESTIONNAIRE ON ATTITUDES TOWARD TEST SITUATIONS:

In the blank space to the left of each statement below, designate how much of the time the statement describes your reaction to test situations by recording the number 1 - 5 according to the following scale:

1 - seldom
2 - occasionally
3 - about half of the time
4 - a good deal of the time
5 - most of the time

NOTE: Do not necessarily limit answers to your experiences at the University of Colorado.

____1. I perspire a great deal while taking an important examination.

____2. I become very panicky when I have to take a surprise examination.

____3. During tests, I find myself thinking of the consequences of failing.

____4. I would never take an intelligence test if I could possibly avoid it.

____5. After important tests, I frequently become so tense that my stomach is upset.

____6. I tend to get depressed after an examination.

____7. I "freeze up" on things like intelligence tests and final exams.

____8. During examinations, I find myself thinking of things unrelated to the actual course material.

____9. During an examination, I am apt to get so nervous that I forget facts I really know.

____10. If I were to take an intelligence test, I would worry a great deal beforehand.

____11. When taking an examination, my emotions help my performance.

____12. Getting a good grade on one test doesn't seem to increase my confidence on the next test.

____13. I have an uneasy, upset feeling before taking an important examination.

____14. After taking a test, I feel that I could have done better than I actually did.

____15. While taking important tests, I have noticed my heart beating rapidly.

____16. I try to do well in everything I undertake.

____17. I find that the standards I set for my own work are usually too high for me to attain.

____18. I am quite confident during examinations.

____19. Before examinations, I have sometimes felt that difficulties (associated with school work) were piling up so high that I could not overcome them.

____20. I feel unable to live up to my parents' expectations of me.

____21. When I am faced with a difficult problem of examination question, I generally "give up" too easily.

PART II

The grade point average (G.P.A.) of University of Colorado students is calculated according to the following system:

A - 4 points per credit hour
B - 3 points per credit hour
C - 2 points per credit hour
D - 1 point per credit hour
F - 0 points per credit hour

On the line following each of the questions below, write the grade point average requested to two decimal places (e.g., 1.79, 2.80, 4.00, etc.)

1. What G.P.A. are you actually working toward at the University? ______

2. What G.P.A do you personally feel you should be working toward? (Your answer here should differ from your answer to question 1 only if you wish that you were studying more, or less, than you actually are.) ______

3. What is the highest G.P.A. that you feel you could obtain with an all-out effort on your part? ______

4. What is the highest G.P.A. that you actually expect to obtain? ______

5. What is the lowest G.P.A. that you expect to obtain? ______

6. What is the lowest G.P.A. that you would consider acceptable? ______

7. What G.P.A. do you think your parents expect you to obtain? ______

8. What is the lowest G.P.A. that you think your parents would consider acceptable? ______

9. What G.P.A. would you like to have, assuming that anything is possible? ______

Appendix F

Adjective Check List for Determining Self Evaluations and Self Acceptance

Listed on the following page are 24 adjectives. Please indicate how often each of these adjectives describes you. Also indicate how desirable you feel this characteristic is in yourself.

Directions

To the right of the list of adjectives are two columns of blanks in which to record your responses. In column 1 designate how much of the time the indicated adjective is descriptive of you by recording the numeral 1, 2, 3, 4, or 5 according to the following scale:

1 - Seldom
2 - Occasionally
3 - About half the time
4 - Much of the time
5 - Most of the time

In column 2, designate how desirable (or undesirable) you feel the indicated characteristic is by recording the numeral 1, 2, 3, 4, or 5 according to the following scale:

1 - I very much dislike my being as I am in this respect
2 - I dislike my being as I am in this respect
3 - I neither dislike nor like my being as I am in this respect
4 - I like my being as I am in this respect
5 - I very much like my being as I am in this respect

For each adjective, record your responses in both column 1 and column 2 before proceeding to the next ajdectives in the list.

NOTE:

Be certain that you use the numeral which represents the response you intend to make. For your convenience the numeral system is repeated at the top of the next page.

NAME ________________________ SEX ________ AGE ________

COLUMN I
Amount of time the adjective is descriptive of you

1 - Seldom
2 - Occasionally
3 - About half the time
4 - Much of the time
5 - Most of the time

COLUMN 2
How I feel about myself in this respect

1 - Very much dislike
2 - Dislike
3 - Neither dislke or like
4 - Like
5 - Very much like

Adjectives	COLUMN I	COLUMN 2
acceptable	____	____
alert	____	____
ambitious	____	____
calm	____	____
competent	____	____
confident	____	____
helpful	____	____
logical	____	____
industrious	____	____
merry	____	____
mature	____	____
nervous	____	____
optimistic	____	____
poised	____	____
responsible	____	____
hardworking	____	____
stable	____	____
studious	____	____
successful	____	____
stubborn	____	____
worthy	____	____
broadminded	____	____
competitive	____	____
motivated	____	____

If you are interested in receiving more information about the nature, purposes and results of this study, please indicate below:

Yes ______ No ______

APPENDIX G

Questionnaire Administered to Parents -- Phase II

Part I General Questionnaire Items
Part 2 Child Rearing Items
Part 3 Evaluation of Child

(Note: Part 3 is identical on both mother's and father's form; only Part 3 of mother's form is presented.)

FOR MOTHERS Your Name ______________________________

Name of Son (Daughter) at Colorado University______________________________

PART I

Please answer questions 1-37 by filling in the blanks or by checking (✓) the appropriate response. The questions pertaining to your son or daughter refer to the one who has just entered the University of Colorado.

1. How many children do you have?________ How many boys?________ How many girls?________

   Which is the child now entering the University?
   ____first (oldest)
   ____second
   ____third
   ____other:____________

2. What was your occupation during the years in which your son (daughter) was growing up?
   ____farmer
   ____businesswoman
   ____skilled laborer
   ____laborer Specifically?____________________
   ____professional
   ____housewife

3. In general, how satisfied were you in this position?
   ____extremely satisfied
   ____very satisfied
   ____somewhat satisfied
   ____not very satisfied
   ____very dissatisfied

4. How far did you go in school?
   ____less than 8th grade
   ____some high school
   ____graduated from high school
   ____some college
   ____graduated from college
   ____some graduate or professional school work
   ____obtained advanced or professional degree

5. How important do you feel a college education is
   a. for a man?
      ____very important, all men should go to college
      ____somewhat important, but not necessary
      ____not very important
      ____quite unimportant
   b. for a woman?
      ____extremely important, all women should go to college
      ____somewhat important but not necessary
      ____not very important
      ____quite unimportant

FOR MOTHERS

6. How well do you expect your son (daughter) to do in college?
____extremely well; nearly an "A" average
____very well; about a "B" average
____fairly well; between a "B" and "C" average
____passable; about a "C" average
____below average; less than a "C" average

7. What do you expect your son's (daughter's) performance in college to be in comparison with his (her) high school performance?
____quite a bit higher than in high school
____somewhat higher than in high school
____about the same as in high school
____somewhat lower than in high school
____quite a bit lower than in high school

8. Has your son (daughter) done as well in school in the past as you expected?
____exceeded expectations greatly
____somewhat exceeded expectations
____met expectations
____somewhat failed to meet expectations
____has not met expectations at all

9. How disappointed do you think you would be if your son (daughter) were to perform poorly in college?
____extremely disappointed
____somewhat disappointed
____not very disappointed
____not at all disappointed

10. What do you feel is the value of a college education?
____solely to obtain a well-paying job upon graduation
____primarily to obtain a well-paying job upon graduation
____slightly to obtain a well-paying job upon graduation
____not at all to obtain a well-paying job upon graduation

11. What do you feel is more important in a college education, broadening oneself intellectually or broadening oneself socially?
____solely broadening oneself intellectually
____primarily broadening oneself intellectually but somewhat broadening oneself socially
____broadening oneself intellectually and socially to an equal degree
____primarily broadening oneself socially but somwhat broadening oneself intellectually
____solely broadening oneself socially

12. What do you believe to be the main factors in attaining good grades?
____intelligence almost exclusively
____primarily intelligence, but also effort to a degree
____effort and intelligence to an equal degree
____primarily effort, but also intelligence to a degree
____effort almost exclusively

FOR MOTHERS

13. How similar do you believe your son's (daughter's) goals and values are to those of other students at C.U.?
____almost identical
____very similar
____fairly similar
____generally dissimilar
____extremely dissimilar

14. How much time do you expect your son (daughter) to devote to studying? (Exclusive of time spent sleeping, eating and in class.)
____almost all his (her) time
____about 75% of his (her) time
____about 50% of his (her) time
____about 25% of his (her) time
____very little of his (her) time

15. How important is it to you that your son (daughter) attend college?
____extremely important
____very important
____somewhat important
____not very important
____not at all important

16. How important is it to you that your son (daughter) join a social fraternit (sorority)?
____extremely important
____very important
____somewhat important
____not very important
____not at all important

17. In terms of the amount of time your son (daughter) spends with the opposite sex, (e.g., dating, informal get-togethers), do you believe that he (she) spends:
____an excessive amount--entirely too much time
____somewhat more than he should
____about the right amount of time
____somewhat less than he should
____entirely too little time

18. How important do you believe attending college is to your son (daughter)?
____extremely important
____very important
____somewhat important
____not very important
____not at all important

19. How well do you feel that you get along with your son (daughter)?
____extremely well
____very well
____fairly well
____not very well
____not at all well

FOR MOTHERS

20. How similar do you think your opinions and beliefs are to those of your son (daughter)?
____extremely similar
____very similar
____somewhat similar
____not very similar
____not at all similar

21. How closely do you believe your son (daughter) resembles his mother or father in personal characteristics, attitudes and beliefs?
____almost completely his father
____mostly his father but somewhat his mother
____both parents equally
____mostly his mother but somewhat his father
____almost completely his mother

22. How much influence do you believe you have over your son (daughter)?
____very much influence
____quite a bit of influence
____some influence
____not very much influence
____hardly any influence

23. Who seems to have the greater influence over son (daughter), you or your husband?
____self
____husband
____both equal influence
____neither has very much influence

24. How often do you and your husband disagree over what is the best way to rear you son (daughter) or what is the best thing for him to do?
____very often
____quite often
____somewhat often
____not very often
____rarely if ever

25. In general, how frequently have you felt it necessary to punish your son (daughter)?
____very frequently
____somewhat frequently
____not very frequently
____almost never

26. How often have you deprived your son (daughter) of something as a way of disciplining him?
____very frequently
____somewhat frequently
____not very frequently
____rarely if ever

FOR MOTHERS

27. Who generally makes decisions about disciplining your children?
____nearly always myself
____usually myself but sometimes by husband
____both myself and my husband equally
____usually my husband but sometimes myself
____nearly always my husband

28. How much independence did you allow your son (daughter)
a. before 12 years of age?
____very much independence
____quite a bit of independence
____some independence
____very little independence

b. between 13 and 17 years of age?
____very much independence
____quite a bit of independence
____some independence
____very little independence

29. Did you or your husband read most to your son (daughter) prior to school age?
____mostly myself
____mostly my husband
____both equally
____neither very much

30. Did you like school when you were a student?
____liked extremely well
____liked very much
____liked fairly well
____neither liked nor disliked
____somewhat disliked
____strongly disliked

31. Have you ever had to push you son (daughter) to study?
____very often
____fairly often
____not very often
____rarely
____never

32. How often have you set up yourself or your husband as an example for your son (daughter) to follow?

a. self	b. husband
____very often	____very often
____fairly often	____fairly often
____not very often	____not very often
____rarely	____rarely

33. How often have you set up a brother or sister of your son (daughter)as an example for him to follow?

a. brother	b. sister
____very often	____very often
____fairly often	____fairly often
____not very often	____not very often
____rarely	____rarely
____has no brothers	____has no sisters

FOR MOTHERS

34. Who generally makes the important decisions about family matters?
____nearly always myself
____usually myself but sometimes my husband
____both myself and my husband equally
____usually my husband but sometimes myself
____nearly always my husband

35. Who generally makes decisions about money matters?
____nearly always myself
____usually myself but sometimes my husband
____both myself and my husband equally
____usually my husband but sometimes myself
____nearly always my husband

36. What is your son (daughter) majoring in at the University?____________
____

To what extent do you approve of this choice?
____approve completely
____approve in general
____neither approve nor disapprove
____disapprove to some extent
____disapprove completely

37. What are your son's (daughter's) occupational plans after graduation?____
____

How similar are these plans to your occupation?
____very similar
____fairly similar
____not very similar
____very dissimilar

How similar are these plans to the occupation of your husband?
____very similar
____fairly similar
____not very similar
____very dissimilar

How similar are these plans to the goals or ideals that you hold for your son (daughter)?
____very similar
____fairly similar
____not very similar
____very dissimilar

FOR MOTHERS

PART II

For questions 38-62 indicate how strongly you agree or disagree with the following statements by writing the number 1, 2, 3, or 4 in the space to the left of each statement in accordance with the following scale:

4 - Agree strongly
3 - Agree moderately
2 - Disagree moderately
1 - Disagree strongly

_____38. Children should be allowed to disagree with their parents if they feel their own ideas are better.

_____39. A good mother should shelter her child from life's little difficulties.

_____40. A child should be taught to avoid fighting no matter what happens.

_____41. If a mother doesn't go ahead and make rules for the home, the children and husband will get into troubles they don't need to.

_____42. Most children are toilet trained by 15 months of age.

_____43. A mother should do her best to avoid any disappointment for her child.

_____44. Mothers very often feel that they can't stand their children a moment longer.

_____45. Husbands could do their part if they were less selfish.

_____46. Children and husbands do better when the mother is strong enough to solve most of the problems.

_____47. A child should never keep a secret from his parents.

_____48. Few women get the gratitude they deserve for all they have done for their children.

_____49. Children pester you with all their little upsets if you aren't careful from the first.

_____50. Parents should know better than to allow their children to be exposed to difficult situations.

_____51. Children need some of the natural meanness taken out of them.

_____52. Children should be more considerate of their mothers since their mothers suffer so much for them.

_____53. The child should not question the thinking of his parents.

_____54. Sex is one of the greatest problems to be contended with in children.

_____55. A mother has a right to know everything going on in her child's life because her child is a part of her.

FOR MOTHERS

_____56. Mothers sacrifice almost all their own fun for their children.

_____57. The women who want lots of parties seldom make good mothers.

_____58. A woman has to choose between having a well-run home and hobnobbing around with friends and neighbors.

_____59. A mother has to do the planning because she is the one who knows what's going on in the home.

_____60. Most children should have more discipline than they get.

_____61. It's natural for a mother to "blow her top" when children are selfish and demanding.

_____62. A young mother feels "held down" because there are lots of things she wants to do while she is young.

PART III

ADJECTIVE LIST

Listed on the following page are 24 adjectives. You are to rate your son (daughter) in terms of how much of the time each of these adjectives is descriptive of him, and also to evaluate the desirability of these personal characteristics.

Directions

To the right of the list of adjectives are two columns of blanks in which to record your responses. In column one designate how much of the time the indicated adjective is descriptive of your son (daughter) by recording the numeral 1, 2, 3, 4, or 5 according to the following scale:

1 - seldom
2 - occasionally
3 - about half of the time
4 - a good deal of the time
5 - most of the time

Designate how you feel about your son (daughter) as you have rated him in column one by recording in column two the numeral 1, 2, 3, 4, or 5 according to the following scale:

1 - I very much dislike his being as he is in this respect
2 - I dislike his being as he is in this respect
3 - I neither dislike his being as he is in this respect nor like his being as he is in this respect
4 - I like his being as he is in this respect
5 - I very much like his being as he is in this respect

Record your responses in both column one and column two before proceeding to the next adjective in the list.

NOTE:

Be certain that you use the numeral which represents the response you intend to make.

NAME OF SON OR DAUGHTER____________________________SEX__________AGE__________

COLUMN I
Amount of time the adjective is descriptive of my son or daughter

1 - Seldom
2 - Occasionally
3 - About half the time
4 - Much of the time
5 - Most of the time

COLUMN 2
How I feel about my son or daughter in this respect

1 - Very much dislike
2 - Dislike
3 - Neither dislike nor like
4 - Like
5 - Very much like

Adjectives	COLUMN I	COLUMN 2
acceptable		
alert		
ambitious		
calm		
competent		
confident		
helpful		
logical		
industrious		
merry		
mature		
nervous		
optimistic		
poised		
responsible		
hardworking		
stable		
studious		
successful		
stubborn		
worthy		
broadminded		
competitive		
motivated		

If you are interested in receiving more information about the nature, purposes and results of this study, please indicate below:

Yes__________ No__________

FOR FATHERS Your Name ____________________________

Name of Son (Daughter) at Colorado University ____________________________

PART I

Please answer questions 1 - 37 by filling in the blanks or by checking (✓) the appropriate response. The questions pertaining to your son or daughter refer to the one who has just entered the University of Colorado.

1. How many children do you have? ________ How many boys? ________ How many girls? ________

Which is the child now entering the University?
____first (oldest)
____second
____third
____other: ________

2. What was your occupation during the years in which your son (daughter) was growing up?
____farmer
____businessman
____skilled laborer
____laborer Specifically? ____________________
____professional
____other: ________________

3. In general, how satisfied were you in this position?
____extremely satisfied
____very satisfied
____somewhat satisfied
____not very satisfied
____very dissatisfied

4. How far did you go in school?
____less than 8th grade
____some high school
____graduated from high school
____some college
____graduated from college
____some graduate or professional school work
____obtained advanced or professional degree

5. How important do you feel a college education is
a. for a man?
____very important, all men should go to college
____somewhat important, but not necessary
____not very important
____quite unimportant

b. for a woman?
____extremely important, all women should go to college
____somewhat important but not necessary
____not very important
____quite unimportant

FOR FATHERS

6. How well do you expect your son (daughter) to do in college?
____extremely well; nearly an "A" average
____very well; about a "B" average
____Fairly well; between a "B" and "C" average
____passable; about a "C" average
____below average; less then a "C" average

7. What do you expect your son's (daughter's) performance in college to be in comparison with his (her) high school performance?
____quite a bit higher than in high school
____somewhat higher than in high school
____about the same as in high school
____somewhat lower than in high school
____quite a bit lower than in high school

8. Has your son (daughter) done as well in school in the past as you expected?
____exceeded expectations greatly
____somewhat exceeded expectations
____met expectations
____somewhat failed to meet expectations
____has not met expectations at all

9. How disappointed do you think you would be if your son (daughter) were to perform poorly in college?
____extremely disappointed
____somewhat disappointed
____not very disappointed
____not at all disappointed

10. What do you feel is the value of a college education?
____solely to obtain a well-paying job upon graduation
____primarily to obtain a well-paying job upon graduation
____slightly to obtain a well-paying job upon graduation
____not at all to obtain a well-paying job upon graduation

11. What do you feel is more important in college education, breadening oneself intellectually or broadening oneself socially?
____solely breadening oneself intellectually
____primarily breadening oneself intellectually but somewhat broadening oneself socially
____broadening oneself intellectually and socially to an equal degree
____primarily broadening oneself socially but somewhat broadening oneself intellectually
____solely broadening oneself socially

12. What do you believe to be the main factors in attaining good grades?
____intelligence almost exclusively
____primarily intelligence, but also effort to a degree
____effort and intelligence to an equal degree
____primarily effort, but also intelligence to a degree
____effort almost exclusively.

FOR FATHERS

13. How similar do you believe your son's (daughter's) goals and values are to those of other students at C.U.?
____ almost identical
____ very similar
____ fairly similar
____ generally dissimilar
____ extremely dissimilar

14. How much time do you expect your son (daughter) to devote to studying? (Exclusive of time spent sleeping, eating and in class.)
____ almost all of his (her) time
____ about 75% of his (her) time
____ about 50% of his (her) time
____ about 25% of his (her) time
____ very little of his (her) time

15. How important is it to you that your son (daughter) attend college?
____ extremely important
____ somewhat important
____ not very important
____ not at all important

16. How important is it to you that your son (daughter) join a social fraternit (sorority)?
____ extremely important
____ very important
____ somewhat important
____ not very important
____ not at all important

16. In terms of the amount of time your son (daughter) spends with the oppdsite sex, (e.g., dating, informal get-togethers), do you believe that he (she) spends:
____ an excessive amount--entirely too much time
____ somewhat more than he should
____ about the right amount of time
____ somewhat less than he should
____ entirely too little time

18. How important do you believe attending college is to your son (daughter)?
____ extremely important
____ very important
____ somewhat important
____ not very important
____ not at all important

19. How well do you feel that you get along with you son (daughter)?
____ extremely well
____ very well
____ fairly well
____ not very well
____ not at all well

FOR FATHERS

20. How similar do you think your opinions and beliefs are to those of your son (daughter)?
____extremely similar
____very similar
____somewhat similar
____not very similar
____not at all similar

21. How closely do you believe your son (daughter) resembles his mother or father in personal characteristics, attitudes and beliefs?
____almost completely his father
____mostly his father but somewhat his mother
____both parents equally
____mostly his mother but somewhat his father
____almost completely his mother

22. How much influence do you believe you have over your son (daughter)?
____very much influence
____quite a bit of influence
____some influence
____not very much influence
____hardly any influence

23. Who seems to have the greater influence over your son (daughter), you or your wife?
____self
____wife
____both equal influence
____neither has very much influence

24. How often do you and your wife disagree over what is the best way to rear your son (daughter) or what is the best thing for him to do?
____very often
____quite often
____somewhat often
____not very often
____rarely if ever

25. In general, how frequently have you felt it necessary to punish your son (daughter)?
____very frequently
____somewhat frequently
____not very frequently
____almost never

26. How often have you deprived your son (daughter) of something as a way of disciplining him?
____very frequently
____somewhat frequently
____not very frequently
____rarely if ever

27. Who generally makes decisions about disciplining your children?
____nearly always myself
____usually myself but sometimes my wife
____both myself and my wife equally
____usually my wife but sometimes myself
____nearly always my wife

28. How much independence did you allow your son (daughter)
a. before 12 years of age?
____very much independence
____quite a bit of independence
____some independence
____very little independence

b. between 13 and 17 years of age?
____very much independence
____quite a bit of independence
____some independence
____very little independence

29. Did you or your wife read most to your son (daughter) prior to school age?
____mostly myself
____mostly my wife
____both equally
____neither very much

30. Did you like school when you were a student?
____liked extremely well
____liked very much
____liked fairly well
____neither liked nor disliked
____somewhat disliked
____strongly disliked

31. Have you ever had to push you son (daughter) to study?
____very often
____fairly often
____not very often
____rarely
____never

32. How often have you set up yourself er your wife as an example for your son (daughter) to follow?
a. self
____very often
____fairly often
____not very often
____rarely

b. wife
____very often
____fairly often
____not very often
____rarely

33. How often have you set up a brother or sister of your son (daughter) as an example for him to follow?
a. brother
____very often
____fairly often
____not very often
____rarely
____has no brothers

b. sister
____very often
____fairly often
____not very often
____rarely
____has no sisters

FOR FATHERS

34. Who generally makes the important decisions about family matters?
____nearly always myself
____usually myself but sometimes my wife
____both myself and my wife equally
____usually my wife but sometimes myself

35. Who generally makes decisions about money matters?
____nearly always myself
____usually myself but sometimes my wife
____both myself and my wife equally
____usually my wife but sometimes myself
____nearly always my wife

36. What is your son (daughter) majoring in at the University? ____________
____

To what extent do you approve of this choice?
____approve completely
____approve in general
____neither approve nor disapprove
____disapprove to some extent
____disapprove completely

37. What are your son's (daughter') occupational plans after graduation?
____

How similar are these plans to your occupation?
____very similar
____fairly similar
____not very similar
____very dissimilar

How similar are these plans to the goals or ideals that you hold for your son (daughter)?
____very similar
____fairly similar
____not very similar
____very dissimilar

PART II

For questions 38-58 indicate how strongly you agree or disagree with the following statements by writing the number 1, 2, 3, or 4 in the space to the left of each statement in accordance with the following scale:

4 - Agree strongly
3 - Agree moderately
2 - Disagree moderately
1 - Disagree strongly

____38. Parents should adjust to the children somewhat rather than always expecting the children to adjust to the parents.

____39. A parent should never be made to look wrong in a child's eyes.

____40. It is very important that young boys and girls not be allowed to see each other completely undressed.

____41. Grown-ups seldom approve of a child who can't keep his feelings in check.

____42. Too many men forget that a father's place when he is not working is with his family.

____43. Children need some of the natural meanness taken out of them.

____44. Parents deserve the highest esteem and regard of their children.

____45. Most wives would do better if they would quit trying to look smarter than their husbands.

____46. Most parents prefer a quiet child to a "scrappy" one.

____47. Children should be allowed to learn through their own experiences rather than being told what to do all the time.

____48. Most children can benefit from more sympathy than they are given.

____49. Men don't know how much they enjoy being free to do as they please until they begin raising a family.

____50. A man has a right to be angry and irritated when the family doesn't give him a chance to relax at home.

____51. A good whipping now and then never hurt any child.

____52. A child deserves to be slapped when he talks back to his parents.

____53. Parents do best if they teach children to be quick in picking up new ways of thinking about life.

____54. Too few children show the respect and devotion that parents deserve.

FOR FATHERS

____55. The old-fashioned family was best because the wife was kept in her plac

____56. The experience of being on their own is often good for children.

____57. Children who know a lot about sex become more curious and get into more trouble.

____58. Even in marriage a person must fight for his rights at times.

Appendix H

Measure of relevance of academic performance-related activity to primary goal attainment--Phase 3A

Below are listed five goals sometimes felt to be important by college students. Rate each of these goals in terms of how important it is to you. Below each goal listed, place a check (✓) on the line at the point that best describes how important the goal is, or how much you would like to attain each goal. For example, if you feel the goal is extremely unimportant to you, place a check on the line near the far left of the scale. If you feel the goal is extremely important, place a check near the far right of the scale. If you feel the importance of the goal is somewhere between these extremes, place a check at the point that best describes your opinion. You may place a check anywhere along the scale that you wish.

1. Goal 1 -- vocational success; getting a good job

0 1 2 3 4 5 6 7 8 9 10

extremely unimportant — extremely important

2. Goal 2 -- being popular with friends around home; i.e., those persons outside the college environment

0 1 2 3 4 5 6 7 8 9 10

extremely unimportant — extremely important

3. Goal 3 -- being well thought of by your parents

0 1 2 3 4 5 6 7 8 9 10

extremely unimportant — extremely important

4. Goal 4 -- having a successful marriage and family life

0 1 2 3 4 5 6 7 8 9 10

extremely unimportant — extremely important

5. Goal 5 -- being popular with other students who attend UICC

0 1 2 3 4 5 6 7 8 9 10

extremely unimportant — extremely important

Now rank the above goals in the order of their importance to you.

Which goal (number 1, 2, 3, 4, or 5) is most important to you? Number ________

Which goal is second in importance to you? Number ________

Which goal is third in importance to you? Number ________

Which goal is fourth in importance to you? Number ________

Which goal is least important to you? Number ________

Listed in the left hand column are several characteristics or behaviors often used to describe college students. Indicate whether you feel each characteristic would aid you in attaining each of the goals described at the top of each column of blanks, or whether you feel it would interfere with attaining the goal. Write the number in each blank that best describes your opinion, using the following scale:

+3 Characteristic would be extremely helpful in attaining goal
+2 Characteristic would be very helpful in attaining goal
+1 Characteristic would be somewhat helpful in attaining goal

0 Characteristic would neither aid nor interfere with attaining goal

-1 Characteristic would interfere somewhat with attaining goal
-2 Characteristic would interfere very much with attaining goal
-3 Characteristic would interfere extremely with attaining goal

	Goal 1 Vocational success; getting a good job	Goal 2 Popularity with friends around home (outside of college)	Goal 3 Successful marriage; good family life	Goal 4 Being well thought of by parents	Goal 5 Popularity with UICC students
1. Achieving academic honors and public recognition for academic performance	___	___	___	___	___
2. Being satisfied with average or below average grades	___	___	___	___	___

	Goal 1 Vocational success; getting a good job	Goal 2 Popularity with friends around home(outside of college)	Goal 3 Successful marriage; good family life	Goal 4 Being well thought of by parents	Goal 5 Popularity with UICC students
3. Getting as good grades in school as possible	___	___	___	___	___
4. Taking snap courses that don't require work	___	___	___	___	___
5. Competing with friends for high academic performance	___	___	___	___	___
6. Not doing well in one's course work	___	___	___	___	___
7. Sticking to tasks until they are completed	___	___	___	___	___
8. Trying not to appear too smart in front of others	___	___	___	___	___
9. Trying to do well in everything one undertakes	___	___	___	___	___
10. Going out on as many dates as possible	___	___	___	___	___
11. Having an active interest in all things scholarly	___	___	___	___	___
12. Participating in social activities whenever one is asked	___	___	___	___	___

	Goal 1 Vocational success; getting a good job	Goal 2 Popularity with friends around home (outside of college)	Goal 3 Successful marriage; good family life	Goal 4 Being well thought of by parents	Goal 5 Popularit with UICC students
13. Striving to gain new knowledge about the world	____	____	____	____	____
14. Doing everything one can to support actively all organizations to which one belongs	____	____	____	____	____
15. Studying more than is required to attain a good grade	____	____	____	____	____
16. Trying to get by in school with as little work as possible	____	____	____	____	____
17. Studying on weekends	____	____	____	____	____
18. Going along with others even when one feels it is not in his best interest	____	____	____	____	____
19. Being recognized as an expert in intellectual arguments	____	____	____	____	____
20. Working to become recognized a leader in non-academic activities	____	____	____	____	

Appendix I

Questionnaires to measure general attitudes and values of students and parents -- Phase 3A

1) Student's questionnaire

2) Parent's questionnaire (mother's and father's forms were identical except for the order of items)

PERSONAL DATA INVENTORY

PART I

Name________________________ Sex (M or F)________

Home Address________________ Do You Plan To Work While In College?_

____________________________ If Yes, How Many Hours Per Week?_____

High School Last Attended______________________________________

Father's Name_______________ Mother's Name____________________

Address (if deceased, leave blank) Address (if deceased, leave blank)

____________________________ ______________________________

____________________________ ______________________________

Occupation__________________ Occupation_______________________

1. Are you attending college to broaden yourself intellectually, or socia or both?
   - _____ solely to broaden myself intellectually
   - _____ primarily to breaden myself intellectually, but somewhat to broaden myself socially
   - _____ to broaden myself intellectually and socially to an equal degree
   - _____ primarily to broaden myself socially, but somewhat to broade myself intellectually
   - _____ solely to broaden myself socially

2. What do you feel is the value of a college education?
   - _____solely to obtain a well-paying job upon graduation
   - _____primarily to obtain a well-paying job upon graduation
   - _____slightly to obtain a well-paying job upon graduation
   - _____not at all to obtain a well-paying job upon graduation

3. What do you expect the atmosphere at UICC to be like?
   - _____highly academic
   - _____primarily academic but somewhat social
   - _____both academic and social to an equal degree
   - _____primarily social but somewhat academic
   - _____primarily social

PART I (cont.)

4. How similar do you expect that the goals and values of other students at UICC will be to yours?
    - ____ goals and values almost identical to mine
    - ____ goals and values very similar to mine
    - ____ goals and values fairly similar to mine
    - ____ goals and values generally dissimilar to mine
    - ____ goals and values completely dissimilar to mine

5. How important is going to college to you?
    - ____ extremely important
    - ____ very important
    - ____ somewhat important
    - ____ not very important
    - ____ not at all important

6. How important is your going to college to your parents?
    - ____ extremely important
    - ____ very important
    - ____ somewhat important
    - ____ not very important
    - ____ not at all important

7. What do you expect to major in here at UICC? ____________________

    How certain are you of this choice?
    - ____ very certain
    - ____ fairly certain
    - ____ somewhat certain
    - ____ not very certain
    - ____ not at all certain

8. What is your primary goal or occupational choice once you graduate from college?

    ____

    How certain are you of this choice or goal?
    - ____ very certain
    - ____ fairly certain
    - ____ somewhat certain
    - ____ not very certain
    - ____ not at all certain

PART II

Each of the following items refer to a characteristic often used to describe people. Some of the characteristics described you will probably admire in persons; others you may dislike in persons. In the space to the left of each item, write the number from -3 to +3 that indicates how admirable you personally believe each characteristic to be. Use the following scale:

+3 something I always admire in persons
+2 something I usually admire in persons
+1 something I sometimes admire in persons

0 something I neither admire nor dislike in persons

-1 something I sometimes dislike in persons
-2 something I usually dislike in persons
-3 something I always dislike in persons

There are no right or wrong answers, so please be as honest as you can, and record the answer that comes closest to your personal opinion. Persons differ greatly in their attitudes, so that whatever you put down you can be assured that many others will agree with you. We are merely interested in determining what things college students think are important and what they think are unimportant.

_____1. Having an appreciation for the arts-- music, drama, literature and ballet

_____2. Being concerned about the happiness of other people

_____3. Being well-mannered and behaving properly in social situations

_____4. Getting the top grade on a test

_____5. Exercising regularly

_____6. Being respected by others who are themselves worthwhile

_____7. Speaking truthfully, without regard for the consequences

_____8. Encouraging other persons to lead religious lives

_____9. Doing unusual things

_____10. Saying what one believes and standing up for what one thinks is right, regardless of what others may think

_____11. Ignoring what goes on in the world

_____12. Revenging wrongs that other people have done to one

_____13. Displaying unpleasant personal habits in public

PART II (cont.)

____14. Taking snap courses that don't require much work

____15. Avoiding strenuous activity

____16. Not being able to do anything better than other people

____17. Helping a friend get by a tight situation even if one has to be a little dishonest to do it

____18. Denying the existence of God

____19. Doing things in the same way that other people do them

____20. Doing what one's friends expect of him

____21. Enjoying books, music, art, philosophy and science

____22. Helping another achieve his goals, even if it might interfere with one's own

____23. Dressing and acting in a way that fits the occasion

____24. Treating one's studies as the most important thing in college life

____25. Having a good figure or physique

____26. Being in a position to direct and mold other's behavior

____27. Volunteering information about wrongdoing, even when friends are involved

____28. Seeking comfort in the Bible in times of need

____29. Being able to create beautiful and artistic things

____30. Thinking and acting freely without worrying what others may say

____31. Reading only things that aren't too great an intellectual challenge

____32. Refusing any aid to people who don't deserve it

____33. Dressing sloppily

____34. Trying to get by in school with as little work as possible

____35. Being physically weak and puny

PART II (cont.)

____36. Having little effect on others' actions

____37. Helping a friend through an examination

____38. Treating the Bible only as a historical or literary work

____39. Always doing things in the same way

____40. Trying to behave in a way that will be acceptable to other people

____41. Knowing what's going on in the world of politics and foreign affairs

____42. Having a deep love for all people

____43. Always behaving properly in public

____44. Studying hard to get good grades

____45. Having good muscular coordination

____46. Being a leader in one's community

____47. Being honest and truthful, even if it is unnecessary

____48. Always practicing one's religion in one's daily life

____49. Being original in one's thinking and ways of looking at things

____50. Being outspoken and frank in expressing one's likes and dislikes

____51. Having no opinion about the world situation

____52. Letting each person go it alone, without offering help

____53. Having bad manners

____54. Not doing well in one's course work

____55. Ignoring one's own physical condition

____56. Associating with worthless people

____57. Telling falsehoods in order to help other people

____58. Being an atheist

____59. Keeping one's life from changing very much

PART II (cont.)

____60. Keeping opinions to oneself when they differ from others

____61. Having a keen interest in international, national, and local affairs

____62. Being considerate of others' feelings

____63. Being informed about the proper way to behave socially

____64. Trying hard to understand difficult lectures and reading material

____65. Keeping in good physical shape

____66. Being looked up to by others

____67. Never cheating or having anything to do with a cheating situation, even for a freind

____68. Having faith in a Being greater than man

____69. Constantly looking for new and different ways of doing things

____70. Being independent

____71. Not being informed about current events

____72. Making jokes about other people

____73. Being ignorant of the rules of proper behavior

____74. Not letting one's studies interfere with the other aspects of college life

____75. Being poorly developed physically

____76. Being content with a second-rate position all one's life

____77. Being dishonest, as long as it doesn't hurt anybody

____78. Paying little attention to religious matters

____79. Working according to a set schedule that doesn't vary from day to day

____80. Trying not to appear unnecessarily different from others

QUESTIONNAIRE FOR MOTHERS Your Name________________________

Name of Son (Daughter) Now Entering

UICC________________________

Part I

Please answer the following questions by filling in the blanks or by checking (/) the appropriate response.

1. How many children do you have?_____ How many boys?_____ How many girls?_____

Which is the child now entering the University?

____first-born
____second-born
____third-born
____fourth-born
____other: _____

2. How far did you go in school?

____less than 8th grade
____some high school
____graduated from high school
____some college
____graduated from college
____some graduate school
____obtained advanced degree

3. Do you feel that college is for broadening oneself intellectually, socially, or both?

____entirely for intellectual broadening
____primarily for intellectual broadening but somewhat for social broadening
____for intellectual and social broadening to an equal degree
____primarily for social broadening but somewhat for intellectual broadening
____entirely for social broadening

4. What do you feel is the value of a college education?

____solely to obtain a well-paying job upon graduation
____primarily to obtain a well-paying job upon graduation
____slightly to obtain a well-paying job upon graduation
____not at all to obtain a well-paying job upon graduation

5. How much active interest do you take in your son's (daughter's) studies and school activities?

____no interest
____very little interest
____some interest
____quite a bit of interest
____very much interest

FOR MOTHERS

Part I (cont.)

6. How important is it to you that your son (daughter) attend college?

____extremely important
____very important
____somewhat important
____not very important
____not at all important

7. How disappointed do you think you would be if your son (daughter) were to perform poorly in college?

____extremely disappointed
____very disappointed
____somewhat disappointed
____not very dispapointed
____not at all disappointed

8. What does your son (daughter) plan to do after graduation from college? (his (her) occupational choice)____________________

To what extent do you approve of this choice?

____approve very much
____approve somewhat
____neither approve nor disapporve
____disapprove somewhat
____disapprove very much

Part II

Each of the following items refers to a characteristic often used to describe persons attending college. Some of the characteristics you probably admire in persons, while others you may dislike. In the space to the left of each item, write the number (from -3 to +3) that indicates how admirable you personally believe each characteristic to be. Use the following scale:

+3 something I always admire in persons
+2 something I usually admire in persons
+1 something I sometimes admire in persons

0 something I neither admire nor dislike in persons

-1 something I sometimes dislike in persons
-2 something I usually dislike in persons
-3 something I always dislike in persons

There are no right or wrong answers, so please be as honest as you can, and record the answer that comes closest to your personal opinion. Persons differ greatly in their attitudes, so that whatever you put down you can be assured that many others will agree with you. We are merely interested in determining what things parents of college students think are important and what they think are unimportant.

+3 something I always admire in persons
+2 something I usually admire in persons
+1 something I sometimes admire in persons
0 something I neither admire nor dislike in persons
-1 something I sometimes dislike in persons
-2 something I usually dislike in persons
-3 something I always dislike in persons

____1. Having an appreciation for the arts -- music, drama, literature and ballet

____2. Being concerned about the happiness of other people

____3. Being well-mannered and behaving properly in social situations

____4. Getting the top grade on a test

____5. Being respected by others who are themselves worthwhile

____6. Speaking truthfully, without regard for the consequences

____7. Encouraging other persons to lead religious lives

____8. Doing unusual things

____9. Saying what one believes and standing up for what one thinks is right, regardless of what others may think

___10. Ignoring what goes on in the world

___11. Revenging wrongs that other people have done to one

___12. Displaying unpleasant personal habits in public

___13. Taking snap courses that don't require much work

___14. Not being able to do anything better than other people

___15. Helping a friend get by a tight situation even if one has to be a little dishonest to do it

___16. Denying the existence of God

___17. Doing things in the same way that other people do them

___18. Doing what one's friends expect of him

___19. Enjoying books, music, art, philosophy and science

___20. Helping another achieve his goals, even if it might interfere with one's own

____21. Dressing and acting in a way that fits the occasion

____22. Treating one's studies as the most important thing in college life

____23. Being in a position to direct and mold other's behavior

____24. Volunteering information about wrongdoing, even when friends are involved

____25. Seeking comfort in the Bible in times of need

____26. Being able to create beautiful and artistic things

____27. Thinking and acting freely without worrying what others may say

____28. Reading only things that aren't too great an intellectual challenge

____29. Refusing any aid to people who don't deserve it

____30. Dressing sloppily

____31. Trying to get by in school with as little work as possible

____32. Having little effect on others' actions

____33. Helping a friend through an examination

____34. Treating the Bible only as a historical or literary work

____35. Always doing things in the same way

____36. Trying to behave in a way that will be acceptable to other people

____37. Knowing what's going on in the world of politics and foreign affairs

____38. Having a deep love for all people

____39. Always behaving properly in public

____40. Studying hard to get good grades

____41. Being a leader in one's community

____42. Being honest and truthful, even if it is unnecessary

____43. Always practicing one's religion in one's daily life

FOR MOTHERS Part II (cont.)

____44. Being original in one's thinking and ways of looking at things

____45. Being outspoken and frank in expressing one's likes and dislikes

____46. Having no opinion about the world situation

____47. Letting each person go it alone, without offering help

____48. Having bad manners

____49. Not doing well in one's course work

____50. Associating with worthless people

____51. Telling falsehoods in order to help other people

____52. Being an atheist

____53. Keeping one's life from changing very much

____54. Keeping opinions to oneself when they differ from others

Appendix J

Questionnaires to determine evaluations made of students by themselves and their parents--Phase 3A

1) Student's form

2) Parent's form

Listed below are 20 adjectives. Please indicate in the blanks to the right of each adjective how often it describes you as you actually are, and how often it describes you as would like to be ideally. Use the following scale:

1 - Seldom
2 - Occasionally
3 - About half the time
4 - Much of the time
5 - Most of the time

Place the numbers that best represent your opinions in the blanks to the right of each adjective.

	COLUMN I Amount of time the adjective describes you as you really are	COLUMN 2 Amount of time the adjective describes you as you would lik to be ideally
alert	______	______
ambitious	______	______
broadminded	______	______
competitive	______	______
confident	______	______
honest	______	______
creative	______	______
independent	______	______
industrious	______	______
intellectual	______	______
kind	______	______
merry	______	______
nervous	______	______
optimistic	______	______
poised	______	______
hardworking	______	______
religious	______	______
studious	______	______
stubborn	______	______
well-liked	______	______

FOR MOTHERS

Listed below are 20 adjectives. Please indicate in the blanks to the right of each adjective how often it describes your son or daughter as he actually is, and also how often it would describe him (her) as you would like him (her) to be ideally. Use the following scale:

1 - Seldom
2 - Occasionally
3 - About half the time
4 - Much of the time
5 - Most of the time

Place the numbers that best represent your opinions in the blanks to the right of each adjective.

	COLUMN I Amount of time the adjective describes him (her) as he actually is	COLUMN 2 Amount of time the adjective would describe him (her) as y would like him (her) to be ide
alert		
ambitious		
broadminded		
competitive		
confident		
honest		
creative		
independent		
industrious		
intellectual		
kind		
merry		
nervous		
optimistic		
poised		
hardworking		
religious		
studious		
stubborn		
well-liked		

Appendix K

Assessment of parental child-rearing attitudes--Phase 3A

(Mothers' and fathers' forms are identical)

FOR MOTHERS

Please indicate how strongly you agree or disagree with the following general statements by writing the number from -3 to +3 in the space to the left of each statement, using the following scale:

+3 Agree strongly
+2 Agree moderately
+1 Agree slightly

-1 Disagree slightly
-2 Disagree moderately
-3 Disagree strongly

_____1. Children should be taught to abide by firm rules.

_____2. Children are better behaved when parents show interest in them.

_____3. Children are bound to get on a person's nerves if he is around them all day.

_____4. Parents should take an interest in their child's activities.

_____5. Parents should do their best to avoid disappointment in their children.

_____6. Children should not be placed in situations that make them doubt the correctness of their parents' views.

_____7. Many children should be more strongly disciplined than they are.

_____8. Children behave better when they feel wanted and needed.

_____9. Parents often feel they can't stand their children a moment longer.

____10. Parents should participate in the activities of their children.

____11. Parents should not allow their child to be exposed to difficult situations.

____12. A parent should never be made to look wrong in a child's eyes.

____13. Parents should not hesitate to spank a child to teach him to change his ways.

____14. Parents should express openly their love and tender feelings for their children.

____15. Raising children is often a nerve-wracking job.

____16. A child should be taught that expressing his feelings openly only makes things worse.

FOR MOTHERS

____17. Children should be kept away from all tasks that might be discouraging.

____18. Children should be kept from learning things outside the home that make them doubt their parent's ideas.

____19. Spanking is often the best way to make a child mind.

____20. A parent should teach his child to set high standards in his wprk.

____21. Children bother you with all their little upsets if you aren't careful from the first.

____22. Grownups seldom approve of a child who can't keep his feelings in check.

____23. Children should be protected from tasks that are too tiring or too hard.

____24. Children should not be confused by exposing them to ideas that conflict with those of their parents.

____25. A good spanking is oftan the only way to convince a child that rules should be obeyed.

____26. A person should be taught in childhood to set his goals high.

____27. It is a mistake to encourage children to tell you all their problems.